Elizabeth City State University

Nurturing ECSU Research Talent (N.E.R.T.)

1998-99 Annual Report

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The report covers the 1998-99 activities of the Nurturing ECSU Research Talent Program. The program is supported by 3 grants: The parent grant is NERT N0014-94-1-1089. The Summer program involving internships and on-campus research training is supported by the AASERT program. All new students in the 98 program were supported by the NERT-2003 (N0014-98-1-0749). This document includes the research team final written reports; Summer 1999 internship abstracts; Summer 1999 Internship placement reports; photo highlights and 1998-99 enrollment and GPA data.

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- ATM/System Administration Team
- Multimedia Authoring Team
- Physics Team
- Computer Networks Team

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- Highlights and Photo Pages
- Fall and Spring Meeting Schedules
- Honors Convocation Program

Executive Summary

This report documents the 1998-99 activities of the Nurturing ECSU Research Talent Program. The NERT program is supported by three active grants. The parent grant number is N0014-94-1-1089 (phaseout funds through 7/31/2002). The summer program, involving internships and on-campus research training, is supported by the AASERT grant #N00014-94-1-0650(funded through 6/01/2000). During the 1998-99 academic year all new students in the program were supported by the NERT-2003 grant no. N00014-98-1-0749 (funded through 7/30/2003). The program activities are documented on the World Wide Web at http://nia.ecsu.edu/onr/onr.html.

The 1998-99 Office of Naval Research Nurturing ECSU Research Talent program involved 22 undergraduates, mathematics, computer science, physics, and technology majors. Research training meetings began August 24, 1999 and were held every Tuesday and Thursday through April 22, 1999. Meetings were conducted from 5-8:00 pm. Research training meetings start with a 20-30 minute announcement period during which time students learn about internship opportunities, hear program announcements, give team reports, discuss travel logistics and goals of the program. Following the announcement period, students meet with faculty mentors or attend training on tools used for research. The closing program was held on two nights in April. During the closing program, students made oral presentations of their research training activities. All research teams were also required to complete written reports. Copies of the written reports are included starting on page 11. In addition, students spend 20 hours/week in the undergraduate research computer laboratory completing task sheet requirements and research assignments.

The program this year resulted in 5 out of 6 of the graduating seniors being admitted to graduate school at North Carolina A& T, Hampton University and Virginia Tech. These five students represent the only CCMP students who went on to graduate school. Statistics on GPA and Enrollment Statistics can be found on page 3.

Summer internship placement was also impressive including: The Naval Research Virtual Reality Laboratory, Virginia Tech, The Department of Energy, Kennedy Space Center, and The Department of Transportation. Internship abstracts for 1998 are included in this report starting on page 7. A listing of 1999 internship placements is included in this report on page 5.

Executive Summary

(continued)

A total of $130,000.00 in scholarships was awarded during academic year 98-99. An additional $10000.00 was awarded through the Graduate Success Program to support program alumni who are pursuing graduate degrees. With respect to the Graduate Success Program, two students completed a Masters of Science degree in computer science from Hampton University. One of those two students will begin work on his Ph.D. in computer science at John Hopkins University in the Fall of 1999.

Students presented their research activities at several undergraduate research conferences including the Seizing Opportunities to Advance Research (SOAR) on the campus of North Carolina A & T University and NAFEO High Tech Expo in Washington DC. In addition, juniors attended the Graduate School Focus Program on the campus of Georgia Tech. All juniors and seniors registered for and took the Graduate Record Examination (GRE).

The program received a site visit from Mr. Anthony Junior, EEO Officer, Office of Naval Research on Nov. 2-3, 1998. At that time Mr. Junior received a project briefing from the principal investigator; visited with program participants; met with university administrators; and accessed the capabilities of the undergraduate research computer laboratory. Mr. Junior was joined by Earl Hayes (White House Initiative on HBCU's) and Ron Blakeley (Department of the Army). Photo highlights of the visit can be found in the appendix.

Eight of the program participants received the ONR-NERT Research Program Award (certificate plus $50.00) for having a 3.0 or above cumulative or current in 30 or more hours of coursework. Four students received the ONR-NERT Research Scholars Award (certificate plus $100.00) for having a 3.0 or above cumulative and current GPA in 30 or more hours of coursework. One student received the ONR-NERT Award of Excellence (certificate plus $1000.00) . She met the requirement for having a 3.0 GPA and having been awarded a fellowship and admission to a graduate program for Fall'99. Photo highlights from the Honors Day Convocation can be found in the appendix. Also in the appendix is a copy of the Honors Convocation program which list not only the awards described but also a list of those students who made the Chancellor's List, Vice Chancellor's List, and Honor List .

Executive Summary

(continued)

With regards to department infrastructure, The Mathematics and Computer Science Department now offers a course in Introduction to Computational Science and Computer Visualization Techniques. Also the revised Computer Graphics Course is now supported by a laboratory of SUN workstations. Six Silicon Graphic O2 workstations have been added to the undergraduate computer research laboratory network.

Dr. Johnny Houston, professor of mathematics and computer science, arranged the visiting lecture series during 1998-99. The visiting lectures were members of the faculty of 6 Historically Black Institutions and 2 international universities. A list of visiting lectures and topics can be found on page 6 of this report.

N.E.R.T.

Nurturing ECSU Research Talent
Elizabeth City State University

This program, entitled "Nurturing ECSU Research Talent" focuses on undergraduate education and undergraduate research experiences. Nurturing these young researchers is a primary concern. Highest priority is given to providing them with the guidance and skills to insure their entrance and success in graduate school. Further, each student learns the fundamentals of scientific research, in a team setting, under the guidance of a faculty mentor. Program activities are as follows:

1. Student development activities

    a) Recruitment of high ability minority students;
    b) Providing a precollege/summer experience for recruited students;
    c) Providing research experiences;
    d) Providing a mentor, graduate school counseling and GRE preparation;
    e) Providing funds for student travel.
    f) Providing financial support for students in the form of research scholarships;

2. Infrastructure activities

    a) Enhancement of current computer graphics and operating systems courses;
    b) Development of a new course in computer visualization;
    c) Establishing a visiting lecture series in computer science;
    d) Providing UNIX network management support;
    e) Acquisition of computer equipment appropriate to support of research training.

1998-99 RESEARCH TEAMS ...

Team Name	Mentors	Team Members (20)
System Admin	Mrs. Marie Koltuniak Dr. L. Hayden	Tina Lassiter Fr/CS Latisha Freeman Fr/CS Courtney Fields Sr/CS Joseph Gale So/CS Sheri Joyner Jr/CS Omar Gordon Fr/CS Bernard Bailey Fr/Tech Melvin Mattock Fr/CS Katrina Godwin Jr/CS Donald Charity Jr/CS
ATM Networks	Mr. R. Harris Ms. C. Gayle	Antonio Rook, Sr/CS Kuchumbi Hayden, Sr/CS
Physics	Dr. L. Choudhury	Santiel Creekmore, Sr/Phy Alicia Jones Jr/CS Lakisha Mundon Sr/Math Michael Pugh Sr/Phy
Multimedia	Mr. J. Wood Dr. S. Atalla	Jonathan Williams, So/CS Je'aime Powell, So/CS Angela Mizzell So/CS Gregory Lassiter Fr/CS

Office of Naval Research

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For more information visit our website

http://nia.ecsu.edu/onr/onr.html

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1998-99 Enrollment & GPA Report

Major Discipline	Number of students enrolled at school (by year)				Number of students enrolled in ONR Program (by year)				Number of students graduated		Number of Graduate Professional School	
	FR	SO	JR	SR	FR	SO	JR	SR	total	ONR	total	ONR
CHEMISTRY	1	3	6	3	0	0	0	0	3	0	0	0
COMPUTER SCIENCE	56	35	34	33	6	4	3	4	15	4	3	3
MATHEMATICS	7	5	7	11	0	0	1	2	6	1	1	1
PHYSICS	1	0	1	1	0	0	0	2	1	1	1	1
TOTALS	65	43	48	48	6	4	4	8	25	6	5	5*

* All CCMP majors who graduated and went on to graduate school from ECSU in 1998-99 were from the NERT program.

	Mean GPA for all CCMP students	Mean GPA for ONR students
Freshman	2.23	3.20
Sophomore	2.49	2.99
Junior	2.80	3.62
Senior	2.96	3.35
Total	2.62	3.29

1998-99 Graduate Success Report

Name	University	Degree Sought/Earned
Anderson, Melvin	NCAT	MS in CS
Archer, Darnley	ODU	MS in CS
Banks, Belinda	NSU	MS in Communication
Basnight, Renee	Hampton Univ.	MS in CS
Bowser, Felicia	NC State	MS in CS
Bright, Teresa	Ohio State	MS in CS
Brown, Michelle	Hampton Univ.	MS in CS
Creekmore, Santiel	Hampton Univ.	MS in Physics
Felton, Curtis	NCAT	MS in CS
Felton, Karen	NCAT	MS in Chem
Fields, Courtney	NCAT	MS in CS
Fields, Michael	Hampton Univ.	MS in Physics
Fofana, Abdula	Howard Univ	MS in CS
Gardner, Bonnie	Univ. of Maryland	MS in CS
Gatling, Charles	NCAT	MS in CS
Gayle, Chonda	Hampton Univ.	MS in CS
Gordon. Kim	Virginia State	MS in Math
Hayden, Kuchumbi	NCAT	MS in CS
Harrell, Jovita	Hampton Univ.	MS in CS
Jones, Clarence	Hampton Univ.	MS in Physics
Jordan, Brian	Hampton Univ	MS in Math
Koltuniak, Eva Dail	Hampton Univ.	MS in CS
McCray, Tim	Hampton Univ.	MS in CS
Mcfadden, Stacia	Michigan State	MS in CS
Monk, Cultilda	Fayetteville State	MS in Math Education
Saunders, Sharon	Hampton Univ.	MS in CS
Thomas, Cathy	Ohio State	MS in CS
Vaughan, Stephanie	Hampton Univ.	MS in CS
Williams, LaVerne	Michigan State	MS in CS

1999 Summer Internship Report

Student	Class	GPA Cur	GPA Cum	Placement
(6)Freshmen:	Cummulative GPA AVG = 3.20			
Bailey, Bernard	FR	3.71	3.59	ONR-AASERT Summer Research Program
Freeman, Latisha	FR	2.63	2.76	ONR-AASERT Summer Research Program
Gordon, Omar	FR	3.36	3.40	ONR-AASERT Summer Research Program
Lassiter, Gregory	FR	3.13	2.93	Fossil Energy Internship with DOE
Lassiter, Tina	FR	3.25	3.13	ONR-AASERT Summer Research Program
Mattocks, Melvin	FR	3.27	3.42	Virtual Reality Research Lab - ONR
(4)Sophomores:	Cummulative GPA AVG = 2.99			
Gale, Michael	SO	3.06	2.92	NASA Langley Research Center
Mizelle, Anglea	SO	2.81	2.85	ONR-AASERT Summer Research Program
Powell, Je'aime	SO	2.78	3.18	ECSU Geometry Institute
Williams, Jonathan	SO	3.00	3.00	ECSU Geometry Institute
(4)Juniors :	Cummulative GPA AVG = 3.62			
Charity, Donald	JR	3.24	3.45	Virtual Reality Research Lab - ONR
Godwin, Katrina	JR	3.61	3.91	ORISE - DEPT. OF ENERGY
Jones, Alicia	JR	3.67	3.48	NASA Langley Research Center
Joyner, Sheri	JR	3.53	3.64	SIECA - Goddard Space Flight Center
(8)Seniors :	Cummulative GPA AVG = 3.35			
Burrus, Derrek	SR	3.67	3.29	Coast Guard Academy
Creekmore, Santiel	SR	3.12	3.39	Hampton University Graduate School
Fields, Courtney	SR	4.00	3.40	North Carolina A & T Graduate School + FAA
Hayden, Kuchumbi	SR	3.40	3.04	North Carolina A & T Graduate School & REESS
Moore, Ayonda	SR	3.39	3.68	NAVAL RESEARCH VR LAB
Mundon, Lakisha	SR	2.33	3.10	NSU Research Experience in Earth System Science
Pugh, Michael	SR	4.00	4.00	NAM Computational Science Institute
Rook, Antonio	SR	2.75	2.92	EXODUS Project in Tennessee

Math & CS Department Visiting Lecture Program

Dr. Johnny Houston, Coordinator

Seminar Colloquium Series
Department of Math & Computer Science
Elizabeth City State University
Elizabeth City, North Carolina 27909

December 1998

8 - Tuesday 2:00p.m. — ***"Controlling Chaos"***
Dr. Symmal K. Dana
Indian Institute of Technology
Calcutta, India

January 1999

28 - Thursday 2:00p.m. — ***"An Interactive Software Package for Introductory Physics Course in The Egyptian Universities"***
Dr. S. R. Atalla
Dept. of Physics, Fayoum Branch, Cairo University
Fayoum, Egypt

February 1999

4 - Thursday 2:00p.m. — ***"Computational Mathematics and Contributions made by African Americans In Mathematical Science"***
Tepper Gill, Ph.D.
Howard University

18 - Thursday 2:00p.m. — ***"Quantum Mechanics and Wave Propagation in Nonlinear Optical Fibers"***
Dr. Dominic P. Clemence
North Carolina A&T State University

March 1999

*5 - Friday 1:00p.m. — ***"Candies and Dollars"***
Dr. Saad Adnan
Mississippi State University

25 - Thursday 2:00p.m. — ***"Applications of Chaos in Digital Communication, Especially in Synchronization of Chaotic Signals"***
Dr. Dipendra Sengupta
Elizabeth City State University

April 1999

1 - Thursday 2:00p.m. — ***"Network Modeling and Data Mining"***
Dr. Nathaniel Dean
Rice University

22 - Thursday 2:00p.m. — ***"A Fault-Tolerant Multiple Bus Interconnection Network"***
Dr. Lillie D. Ward
Fort Valley State University

May 1999

16 - 28 — **ECSU's Computational Science Institute**
(Several Presenters will be invited)

N.E.R.T.

Nurturing ECSU Research Talent
Elizabeth City State University

SUMMER 1998 RESEARCH ABSTRACTS ...

Bambo: A Portable System for Dynamically Extensible, Real-time, Networked, Virtual Environments

Researcher: Alicia Jones
Mentor: Dr. Simon Julier, ONR-NRL

Distributed virtual environments enable interactions between participants. One of the goals at the Naval Research Laboratory's Vitual Reality Lab is to be able to have various people in a virtual environment and be able to have a system load and unload information upon demand. Bamboo is a distributed, dynamically extensible virtual reality toolkit that is being developed by Kent Watsen and Mike Zyda at the Naval Postgraduate School in Monterey, CA. It came out in May 1997. Bamboo is named after the plant which is compromised to many interwired shoots and roots. It is designed to facilitate the research and development of virtual environment application of multiple platforms. Bamboo supports callbacks, threads, and eventhandling. All three mechanisms work together so modules can be loaded and unloaded up demand. The callback is one of the most fundamental mechanism in all of Bamboo. Bamboo has gained the interest of the VR Lab because they would like to use this software with ongoing projects.

VRML 2.0 - Virtual Modeling Language Version 2.0 Development and Interactivty

Researcher: Donald Charity
Mentor: Dr. Edward Swan II, ONR-NRL

The purpose of my internship here at NRL was to develop programs and script in VRML to make interactivity between the user and program more efficient. Also, to develop template programs to cut back length of scripted programming, time of production and time of production by inlining object files into the multipurpose event handling script generated in the template file.
The script developed will be used to inline multiple object files into real time battle situations with full versatility in movement in a netscape browser. All template files have the option of moving an object in the X,Y,Z, plane of the virtual world. This is important in the development of real-time battle situations. Another helpful tool, the capability of VRML and Javascript in creating Javascript, opens the world of highlighting, movement, and also mouse-over events. Used along with VRML, the programs developed become ever so more powerful and user friendly. Another advantage in using the template files is that the programmer is able switch in and out objects he or she wants to see in full movabilty. VRML is becoming an broader research field at the VR lab. Because of its accessiblity and viewability through netscape.

Optical Characterization of the absorption and emission properties of Tm doped FAP and S-FAP

Researcher: Santiel J. Creekmore
Mentor: Carl E. Bonner Jr.
Department of Chemistry and
Center for Materials Research, NSU

This research involved the optical characterization of a new laser material Tm, doped fluorapatite and strontium fluorapatite. The absorption and emission properties of each material have been characterized using temperature dependent and polarization dependent absorption and emission spectroscopy. The energy levels of each crystal have been determined as well as the absorption and emission efficiency.

Generation of Test Tools to Exerciser Benchmark and Troubleshoot Network Equipment for Realtime CLCS

Researcher: Katrina Godwin
Mentor: John Porter, KSC for CLCS Lead
Network Systems, Kennedy Space Center

The Checkout and Launch Control System (CLCS) mission is to replace the current Launch Procession System (LPS) with standards - based, Commercial Off-The-Shelf (COTS) system and custom software. It will utilize multi-vendor platforms tied together with standrad Local Area Network(LAN) technology. A program mandate is to replace the existing LPS without causing changes to existing flight hardware or software and with no impact to the flight manifest. Ultimately, these tools will mature into a deliverable suite of tools to be used by the Operations Engineers in their day-to-day activities, as well as generating data to be used in the vendor selection of various network components. The tools were generated in the "C" programming language within the Unix environment and utilized, at a minimum, the User Datagram Protocol (UDP) and the Internet Protocol (IP) via the use of Unix sockets.

DOE Fossil Energy Website Using Homepage

Researcher: Courtney Fields
Mentor: Dorothy Fowlers &
Diana Greenhaligh
U.S. Department of Energy

The main goal of this project was to develop a homepage for Headquarters Fossil Energy HBCU Internship Program using HomeSite Software. The homepage consisted of a brief description of the program, links to the Fossil Energy homepage, Department of Energy educational homepage, and a link to several HBCUs involved in the program. The primary objective was to design and create a homepage using Hypertext Markup Language (HTML) and Homesite software. The second objective was to write an instructional manual to be used by the Headquarters Fossil Energy HBCU Internship Program coordinators. To achieve this goal, it was necessary to apply my educational and technical knowledge to, coordinate, consult, negotiate and train the program coordinators throuhout the process.

Simulation of Acoustic Wave Propagation in Randomly Layered Media

Researcher: Ayonda Moore
Mentor: Dr. Werner Kohler, Virginia Tech

This project involves the development of a MATLAB based simulation code to study acoustic wave propagation through finely layered material. The goal of this effort will be to ultimately compare the predictions to some existing theory with these simulations.
The code itself utilizes random number generators in MATLAB to create a large number of realizations (about 5000) of the layered material. Each realization consist of large macrolayers (approximately 10 layers and roughly kilmeters thick) within the materials sound speed changes randomly every three meters. Below this roughly 5 kilometers slab of random layering, lies a semi-infinite basement. For each realization, the boundary value problem for the acoustic prob-

lem issolved not only for each realization but also for each frequency of interest. Ultimately the statistics of the ensemble of solution will be studied and compared with theory.

Temporal responses of the maize catalase to low temperature

Researcher: Tanya Granger
Mentor: Dr. John Scandalios
North Carolina State University

Catalase is primary antioxidant enzyme that can remove hydrogen peroxide (H202) rapidly and prevent the formation of reactive oxygen species. It is this enzyme that exhibits temporal differences in response to environmental factors. In this experiment the plant Zea mays (Maize) was used. In maize three unlinked structural calatase genes Cat-1, Cat-2, and Cat-3 encode a catalase isozyme (Cat-1, Cat-2, Cat-3). It has been known that the expression of specific catalase isozymes is important and critical against oxidative stress induced by a given envorimental stress. Four maize lines (W64A, WA10B, W19D and WDN7-1) were observed to see if the catalase isozymes are induced or reduce in an environment of 4 degreesCelsius. W64A is the maize standard inbred line which express all three cat genes. WA10B expresses Cat-2 gene. W19D maize line expresses stages of their development. The chilling stress at 4 degrees Celsius will help to detect changes in the pattern of catalase isozyme expreession through the course of normal postgermination development. The four maize lines were post imbibition for two and five days. This helps to detect if chilling has an effect on catalase. The cutella and axes of germinated seeds and developing kernels were studied. The catalase genes are expressed primarily in these parts of the corn kernel. The effect of catalase to low temperatures helps to detect the state levels of mRNA. This experiment determines if the chilling stress on catalase enzyme turns it gene on or off.

Zero-Based Rulemaking Project
Researcher: Sheri Joyner
Mentor: David Lehrman
Federal Department of Transportation

The ten-week internship at the Department of Transportaion involves work with the Office of Motor Carrier. Currently, the Office of Motor Carrier are working on a project known as the "Zero-Base Rulemaking Project." The "Zero-Base Rulemaking Project" was launched in 1992 to improve the organization, format, and clarify of the FMCRs. The goal of this internship project was to establish a Web Page for the public in which there are links between the FMCRs and various other web sites.
To complete this process various software packages such as Frontpage and Microsoft Network Composer was utilized. Knowledge of the overall structure of the agency, and how various regulations become official was also a prequisite. During this project, the need to learn a new technical vocabulary used by the Office of Motor Carriers and the Plain English Movement was essential.

The Statistical Analysis of Consumer's Choice in Athletic Footwear

Researcher: Lakisha Mundon
Mentor: Dr. Vinod Manglik, ECSU

This research involves conducting a study to determine which factors effect the way consumers purchase athletic footwear. The most effective way to conduct this research was to create a specifically designed questionaire. The data collected was analyzed statistically by using the techniques for categorical data. Cross-tabulation and chi-square procedures were used to determine the significant effects. The primary factors which influence the consumer decision-making process are the type of shoe, the brand name, and the shoe price. Other variables that play a role in the selection process are race, age, salary, and sex. These are the independent variables. The dependent variable was the consumer's preference for the athletic footwear.

Multimedia Authoring with Authorware

Researchers: Jonathan Williams,Je'aime Powell, Angela Mizelle

Mentor: Jeff Wood,U.S. Coast Guard Base
Dr. Atalla, University of Cairo

The N.E.R.T. Multimedia Group explored the world of interactive presentations through Authorware Software. First, the group learned Authorware basics by using the Macromedia Authorware 4 Authorized Hands-On Training booklet. Once the students had mastered the basic concept of Authorware, they then created their own story boards for an original presentation. The students presentation was called, "Authorware: From Us to You". With this presentation the students explained what Authorware is and its eduactional value. The primary audience was made up of fellow students who have not yet been exposed to this type of multimedia software. Students in the multimedia group also learned how to insert pictures, graphics, sounds and text into their original Authorware presentation. A field trip to the local United States Coast Guard Base allowed students to view several Authorware presentations created by staff at the USCG Media Center. While at the USCG the students received other ideas, and suggestions from Authorware users that enhanced the presentation.

The second stage of this project will involve providing support for an Interactive Multimedia Physics Training Package under development by the University of Cairo, Egypt. Egyptian PI will spend 4 weeks at ECSU to train with the team. Packages generated will be used by underclass physics majors at the University of Cairo.

A Comparison of Apache and NCSA Models to Establish the ECSU Sun 17 Hypertext Transfer Protocol Server.

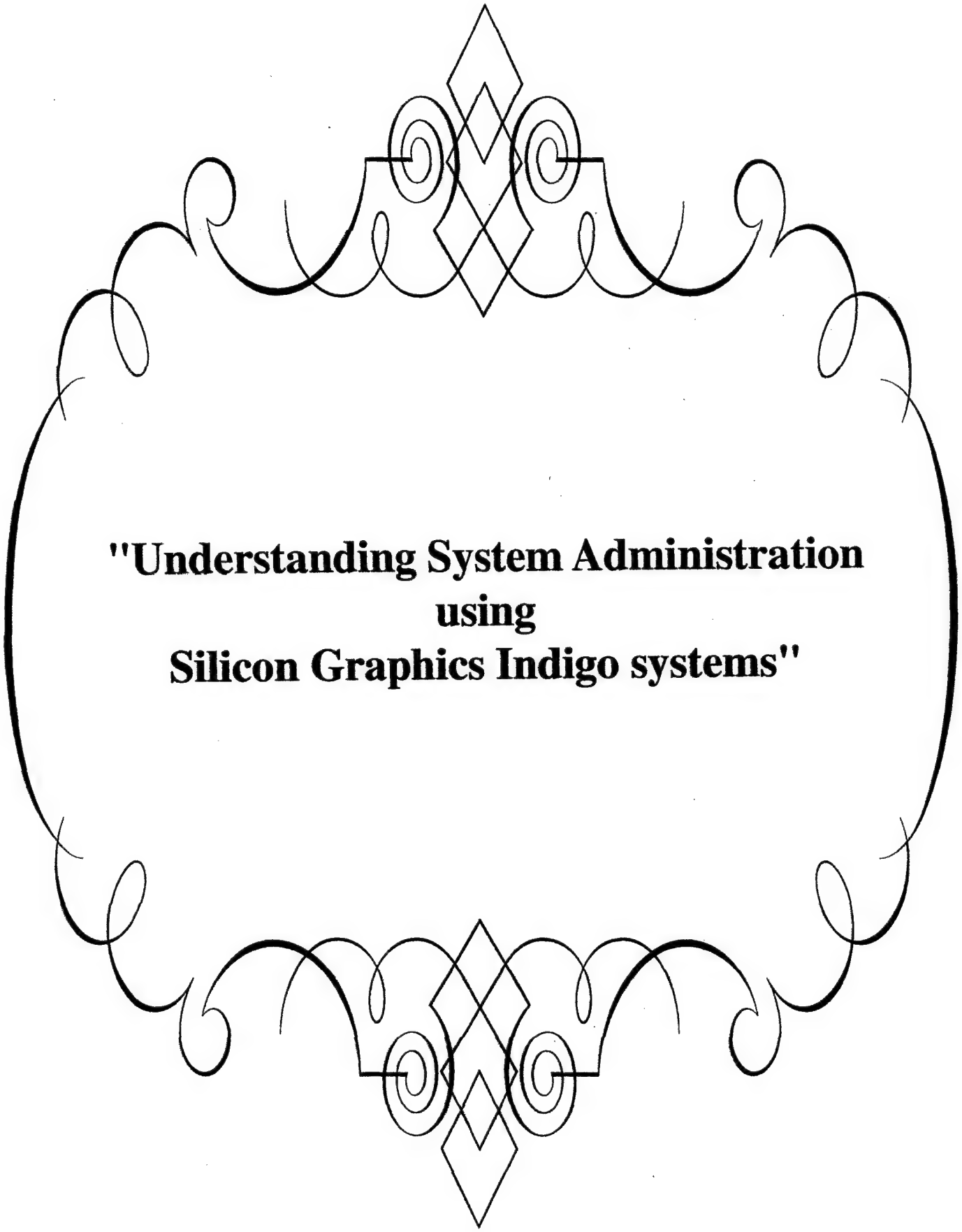
Researcher: Kuchumi Hayden
Mentor: Dr. Kossi Edoh, ECSU

The purpose of this research project was to explain how to setup a World Wide Web Server using two different methods. The project tested servers based on the HTTP server developed by the National Center for Supercomputing Applications (NCSA) verses Apache 1.2.5.

The National Center for Supercomputing Application (NCSA) was started at the University of Illinois at Urban-Champaign in 1985 with a grant from the National Science Foundation. NCSA is responsible for one of the most popular servers in this day and age. The NCSA server will compile and run on most UNIX systems.
The Apache server is a freeware Web server written by the Apache Group, a nonprofit organization of volunteer software developers. Apache is known ot work with microcomputers and workstations running Solaris, SunOS, Next, HPUX, FreeBSD, BSDI, IRIX, Linus, SCO, AUX, AIX, DEC Unix, Ultrix, and UnixWare variants.

This project involved studiying all aspects of installing a server. This machine was located in Lester Hall at Elizabeth City State University. The Apache web server is used as a backup for the ECSU NCSA web server. Our research will show the comparison of three security issues:1) Login names and passwords needed to down load documents, 2) Use of proxies and 3) Use of virtual host.

Dr. Hayden is shown with researchers.

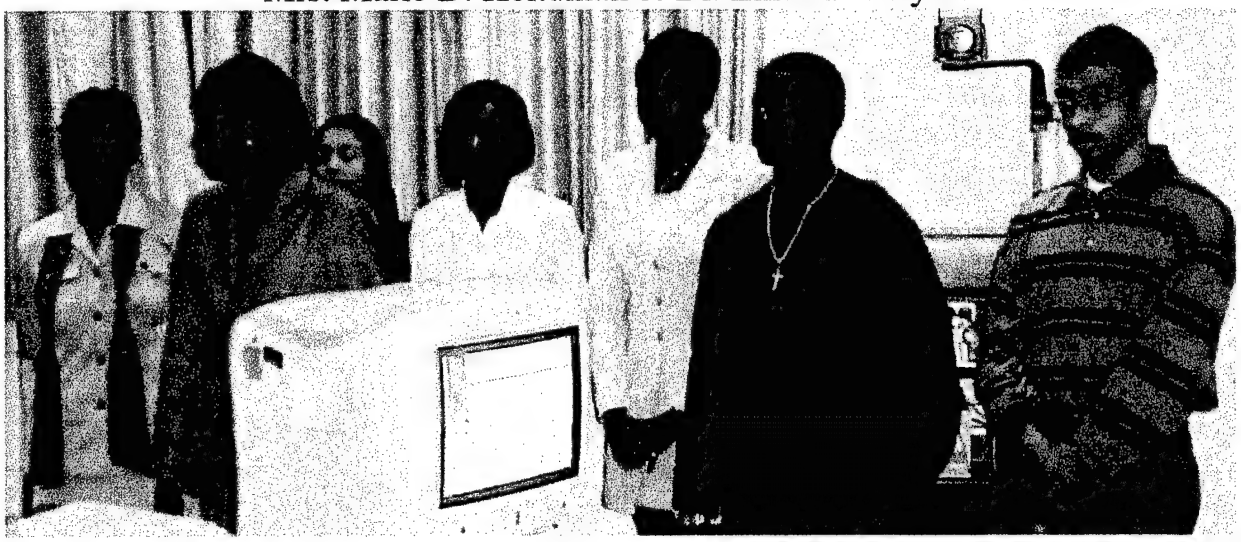


"Understanding System Administration using Silicon Graphics Indigo systems"

1998-99 System Administration Team

Mentors:

Mrs. Marie D. Koltuniak & Dr. Linda B. Hayden



Team Members:

Bernard Bailey
Donald Charity
Courtney Fields
Latisha Freeman
Joseph Gale
Katrina Godwin
Omar Gordon
Sheri Joyner
Tina Lassiter
Melvin Mattocks

Abstract

System administration is a job that entails a lot of responsibility and time. It includes such tasks as adding new users to the system, performing backups of the system, restoring files from backups, answering user questions, monitoring system activity, moving jobs in the print queue, worrying about system security, installing programs and operating system updates, trying to free up disk space, rebooting the system after a crash, straightening network glitches, going to meetings, adding new systems to the network and writing scripts to automate as many of the above activites as possible. Many people don't realize how important the job is and what is consists of. The System Administration team at ECSU found out what some of those jobs were during their research. Four Silicon Graphics Indigo systems were donated in February 1999. The research team had the goals of formatting the systems, installing new operating systems, installing software, setting up user accounts and setting up a network.

The researchers were able to format the hard drive using UNIX commands, install a new operating system from the CD-ROM and set up user accounts manually on one of the Indigo systems. This amount of work showed the researchers how time consuming and how much research can go into this job. Researchers used the book "UNIX Made Easy" by John Muster & Associates and the Silicon Graphics On-line Manuals as references in their study.

The students also had the chance to see that there is more involved than just typing in UNIX commands. The students gained hands on experience in mounting hard drives onto others and using the CD-ROM to install the operating system. These operations involved removing the hard drive from the Indigo and mounting it onto one of the Indy machines in Room 115 and connecting the CD-ROM to the Indigo system. All of these tasks gave the researchers an understanding of what the system administration profession is like.

Introduction

In February 1999, four Silicon Graphics Indigo system CPUs were donated by NASA-Langley. Those four systems were what the System Administrations research project revolved around. They were to format the systems, install new operating systems, install software, set up user accounts and set up a network so that the systems could be of use. So that the group would be familiar with UNIX commands used in system administration, they began our research using "UNIX Made Easy", by John Muster and Associates. This book allowed them to learn basic UNIX commands which would then allow them to:

- Log on and off the system
- Create and manage files using various UNIX programs or utilities
- Copy, sort, move, remove, and print files
- Change the access permissions for a file
- Move to specific standard directories and then return to their workspace
- Have the output of a utility saved in a file
- Obtain information about UNIX, a multi-user and multi-processing environment, from the on-line manual pages
- Change the password
- How to use vi editor
- Use grep, sed, and awk

With what they learned, the group was familiar enough to be able to understand and research system administration commands.

Preliminary Work

All four of the Indigo systems would boot up to the login prompt. Only one system allowed us to log in as root. The other three systems would not allow us to login as root and the passwords were not known for those systems. This narrowed our research down to just the one system that would allow us to log in.

Upon starting up the system, a screen appeared with a 'Stop for Maintenance' option. This option was chosen and a menu appeared with five items:

- **Start System**
- **Install System Software**
- **Run Diagnostics**
- **Recover System**
- **Enter Command Monitor.**

The 'Start System' option allowed you to finish booting up the system to login. 'Install System Software' gave a choice of installing new software from a CD-ROM, remote tape, or directory. The 'Run Diagnostics' option consists of information regarding the system. The following information was given when 'Run Diagnostics' was chosen on the Indigo system:

- System: IP20
- Processor: 150 Mhz R4400 with FPU
- Primary I-cache size: 16 Kbytes
- Primary D-cache size: 16 Kbytes
- Secondary cache size: 1024 Kbytes
- Memory size: 64 Mbytes
- Graphics: GR2-Elan

SCSI Disk: scsi(0) disk(1)

'Recover System' is utilized when the system crashes. It gives a choice of recovering the system from a remote tape, a remote directory, a local CD-ROM, or a local tape. The 'Enter Command Monitor' option gives a shell prompt.

Formatting and Mounting the Hard Drive

Preparing the hard drive for formatting and mounting utilized teamwork and resources to complete. The first step was researching what was on the Indigos hard drive. This was accessible through the system which allowed access through root Super-User passage. The team was able to see the system files. The task was to mount the hard drive using the Indy file system and then installing the 6.2 system software on the hard drives.

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To complete the task of mounting, the team used reference manuals to help guide in the use of UNIX commands. After researching the steps and UNIX commands needed for mounting, experimentation took place. First, with trying to mount the Indigo hard drive with the Indy file system. This process allowed recognition of the hard drive by the Indy but was not able to mount the drive. The reason mount ability was rejected is the system was not able to distinguish between the two root file systems. Then the team gained access to the scuzzy hard drive mount. The team was able to connect the Indigo hard drive to the Indy. This trial allowed the team to see the hard drive again but mount ability was denied. The final trail was to hook the hard drive back to the Indigos and try using command lines from researching the manuals. The result was successful, the command fx -x FORMAT (dksc) created an menu for formatting drives and mounting them. The command fx>[f]ormat gave access for destroying all data on the disk and mounting/formatting Indigo hard drives for use. This left the hard drive in installation readiness.

Installation of System Software

After formatting the hard drive, the task of installing the operating system was at hand. We installed IRIX 6.2 first. It was located on 2 CD's. We first connected the external CD-ROM to the Indigo system. We then booted up the system. We clicked on the "Stop for Maintenance" box when it appeared. We then tried installing with the "Install System Software" option. We chose to install from the local CD-ROM. But for some reason, the system would not read from the CD-ROM. It kept giving us the error that it was not bootable. We then restarted the system with the installation CD in the CD-ROM, thinking that it would read from the CD-ROM at restart. This was not successful either. We realized that we would have to use a UNIX command to make the hard drive read from the CD-ROM. This started our search into the UNIX commands that we would be able to use.

We then looked in the "IRIX Advanced Site and Server Administration Guides" to see what commands we needed to use. It was at this point that we needed to choose the option "Command Monitor" from the "Stop for Maintenance" menu. After trying various commands, the one that worked was:

boot -f disc (0,6,8) cash ARCS disc (0,6,7) stand/ fx ARCS --x

This command tells the system to read from a local CD-ROM and load the software onto the hard drive. At this point, a dialogue box came up saying "Copying Installation Software". After it finished copying, the "inst" program was started. After researching this, we found out we needed to use the "install" command from the "inst" menu first. The system then checks to see if there may be any conflicts with the installations files. There were no conflicts at this point. After this, we typed the command "go" from the "inst" menu. This command actually installs the operating system. Once it finished installing, we were prompted to restart. At restart, the system came up and let up log in as root. Once we were logged in, the only item displayed on the desktop was the shell prompt box. At this point we realized there were 2 CD's to install. So we tried installing CD #2 like we did CD #1. Once we tried installing it though, it gave us a message saying that there was not enough memory left.

At this point we tried installing IRIX 5.3 to see if would install all of the operating system, hoping that it would not take up so much memory. It went through the installation process with no problems. At restart though, we got the message that "Autoboot Failed". After reading the instructions on what to check for when that happens, we found out that there was a kernel conflict between IRIX 5.3 and the kernel on the Indigo system. It wouldn't even let us boot up the system. Therefore, we decided to reinstall IRIX 6.2.

During this process, once the installation files were copied from the IRIX 6.2 CD #1 and the "inst" program came up, we used the "install" option again. This time we were told that there were conflicts. By using the "conflict" option from the "inst" program, it gave us a listing of what the conflicts were. We were instructed to delete certain files because they couldn't be installed with other certain files. There ended up being about 55 files to remove. After removing the files and checking for conflicts one final time using the "conflict" option, we issued the "go" command and the hard drive started installing the operating system.

At restart , the system came up with no problems. Although, the display looked the same as earlier, with just the shell prompt. We then looked to see what type of materials were on CD #2 for IRIX 6.2 by using the OS 2's in the Mac Lab. There were no installation tools on that CD. We then tried to figure out why none of the background displays were not coming up. We started looking in the Indy System Administrators On-line Manuals. This led us to the "system.chestrc" file. This topic is covered more in our "Future Work" section.

While researching the system.chestrc file, we were also attempting another one of our tasks. That was to start adding user accounts onto the system. Occasionally, you have to add a user account manually instead of using the automated tools, such as sysadm. Knowing how to do this is important in case there is a problem with some part of the automated tools or if you wish to design your own scripts and programs for administering user accounts at your site.

These were the steps used to add users manually:

1. Log in as root.
2. Edit the file **/etc/passwd** using vi.
3. The file /etc/passwd has one line for each account on the system. Each line contains seven fields, and each field is separated by a colon. The lines look similar to this:

   ralph:g0Q3xsv5bWuM:103:101:Ralph Cramden:/usr/ralph/bin/csh

4. Change the first field (ralph in this example) to the name of the new account, alice, for example.
5. Remove any characters between the first colon after the account name and the second colon. Deleting these characters removes the password from an account. Either you or the new user can add a password later.
6. The next field (in this case, "103" is the user-ID of the new account. Change it to the next higher number than the current highest user ID on your system. You should not use user ID numbers between 0 and 100, as these are reserved for system use.
7. The next field (in this case, "101) is the group ID number of the new account. Check the file /etc/group file that lists all the groups on the system by group ID, followed by a list of the current users who belong to that group.
8. Change the next field (in this case, "Ralph Cramden") to the name of the new user, Alice Cramden, for example. If you wish, you can add an "office" and "phone number" to this field. After the user's name, add a comma, then the office location, another comma and the phone number. It would look like:

   "Alice Cramden, Brooklyn, 252-555-1212"

Actually , you can put any information you wish in these fields. The fields are interpreted by the finger program as "user name, office, phone number".

9. The next field (/usr/ralph) is the location of the user's home directory. Change this field to reflect the name of the new user's account. In this example, you would change **/usr/ralph** to **/usr/alice.**
10. The last field (/bin/csh) is the user's login shell. For most users, either C shell (/bin/csh) or the Bourne shell (/bin/sh) are appropriate. You can leave this field unchanged, unless you wish to use a special shell.
11. You are finished editing the **/etc/passwd** file now. Write the changes you made and exit vi by using the **:wq** command. The next step, which is optional, is to ad the new user to the file **/etc/group**. A user can be a member of a group without being listed in the /etc/group file.
12. If you want to maintain a list of the groups to which users belong, edit the file **/etc/group**. You should see some lines similar to this:

```
sys::0:root,bin,sys,adm
root::0:root
daemon::1:root, daemon
bin::2:root, bin, daemon
adm::3:root, adm,daemon
mail::4:root
uucp::5:uucp
rje::8:rje,shqer
lp:*:9:
nuucp::10:nuucp
bowling:*:101:ralph
other:*:102
```

Adding account names to the /etc/group file is optional, but it is a good way to keep track of who belongs to the various system groups. Also you can assign an account to more than one group by placing the account name after the names of the various groups in /etc/group. The user can change group affiliations with the new grp(1) and multgrps(1) commands.

13. When you finish editing /etc/group, write your changes and exit the file. The next step is to create the new user's home directory and copy shell startup files over to that directory.

14. Use the mkdir command to create the user's home directory. For example, to create a home directory for the user "alice", use the following command:

    # mkdir /usr/alice

    Make the directory owned by user alice, who is in the group bowling.

    # chown alice /usr/alice

    # chown bowling /usr/alice

    Make sure the new home directory has the appropriate access permissions for your site. For a site with relaxed security:

    # chmod 755 /usr/bowling

15. Copy the shell startup files to the new user's home directory.

    If the new account uses the C shell :

    # cp /etc/stdcshrc /usr/alice.cshrc

    # cp /etc/stdlogin /usr/alice.login

    If the new account used the Bourne shell:

    # cp /etc/stdprofile /usr/alice/.profile

16 You can make these shell startup files owned by the user, or leave them owned by root. Neither approach affects how the user logs into the system, although if the files are owned by root, the user is less likely to accidentally alter them and be unable to login. To give a user complete access to his or her shell start up files, use the chmod command.

    For C shell: # chmod 755 /usr/alice/.cshrc /usr/alice/.login

    For Bourne shell: # chmod 755 /usr/alice/.profile

Future Work

As part of the plans for next years research team, there are three areas where this research can be continued. One area is with the "system.chestrc" file. The file called system.chestrc exists in your /usr/lib/X11 directory. This file determines the system wide settings for the toolchest. You can add toolchests and toolchest menu items to your account by creating a file called .auxchestrc in your home directory. This file adds the items you specify to all the items already specified in the system.chestrc.file.

The system.chestrc file contains all the toolchest headings and toolchest menu items that appear on your desktop. Open the system.chestrc file in your /usr/lib/X11 directory. At the top of the file, you see some lines similar to these:

Menu ToolChest

{

"Desktop" f.menu Desktop

no-label f.separator

"Selected" f.menu Selected

no-label f.separator

"Find" f.menu Find

no-label f.separator

"System" f.menu system

no-label f.separator

"Help" f.menu Help

}

This defines the toolchests. The left side lists the names of the toolchests. All the names are enclosed in quotes. The right side describes what happens when you choose a particular item. The following commands are what will be used to enter the system.chestrc file on the Indigo that is currently running IRIX 6.2:

Adding Toolchests and Toolchest Menu Items Using the .auxchestrc File

You can add toolchests and toolchest menu items by creating a .auxchestrc file:

1. Open a shell window by choosing "Unix Shell" from the Desktop toolchest.

2. Create the .auxchestrc file

- Place the cursor in the shell window.
- Type CD and hit <Enter> to move to your home directory.
- Start the text editor and create the file.

3. Enter text specifying the toolchest you want to add. For example, if you want to add a

new toolchest called "Applications", you would enter the following:

```
Menu ToolChest
{
 no-label      f.separator
 "Applications"   f.menu Applications
}
```

4. Enter the text specifying the menu items you want to add to that toolchest. For example, if you wanted to add jot to the Applications toolchest menu, you would type the following:

```
Menu Applications
{
"jot"    f.checkexec "/usr/sbin/jot"
}
```

5. Save and close the .auxchestrc file.
6. Log out, then log back in.

   The new toolchest named Applications appears with the toolchests, and the menu item "jot" appears in the Applications toolchest menu.

Adding, Deleting, and Renaming Toolchests and Toolchest Menu Items Using the .chestrc File.

If you want to customize the toolchests more extensively by adding, deleting, and renaming items, create a .chestrc file:

1. Open a shell window by choosing "Unix Shell" from the Desktop toolchest.
2. Create a file called .chestrc in your home directory by copying the file system.chestrc from your /usr/lib/X11 directory and renaming it. To do this:

- Place the cursor in the shell window
- Type CD and hit <Enter> to move to your home directory.
- Type: cp /usr/lib/X11/system.chestrc .chestrc then press <Enter>

3. Edit the .chestrc file by running the text editor.

4. When you are finished, save and close the file.
5. Log out, then log back in.

The toolchests appear the way you specified in the .chestrc file.

Along with adding the system.chestrc file, another future task will be to locate and download software off the Internet to load onto the Indigo systems. This is to include some type of text processing software. Also, once the other three Indigo systems are running correctly, we will be creating a network between the four systems. This will allow the system administration team to have their own network to work on and there won't be any risk of messing up the network in Lester Hall.

Literature Reviews

What Will Happen in the Next 50 Years?

by Ted Selker

Katrina Godwin

I agree with the author's statement that fifty years from now when intellectual, ecological, and productivity goals that seem just out of reach today become pervasive and mundane. Technology will eventually replace items such as wallets with pertinent information. The author asks a few questions such as, "Will society improve because of technology?" Society will only improve if society is willing to change.

Donald Charity

In summary of this article, technology has come a long way in development. Such as laptop computers, e-mail, and the Internet. Our society as a whole has become more dependent on technology than each other. To get money, information, and resources; technology development in the past has made it happen. The problem presented by the author is that as our society advances in the development of new technology, the human side of our development becomes transparent. Our society becomes less dependent on each other to obtain resources. Instead we depend on

machines and other technologies to help us complete our every day tasks. What will happen in the next 50 years? The author asks the question, "Technology will inevitably be absorbed by society. But will society improve?" His conclusion, we should enjoy the fruit we produce, but also learn to enjoy each other as a person and not only reach technological goals, but also reach the intellectual and ecological goal as a whole society.

Courtney Fields

This article was very interesting to me because it allows you to visualize and think about the future and how we as humans will survive in society. I believe that 50 years from now everything will be computerized and materials for certain jobs will be better. Nothing will have to be done manually, instead it will be done electronically or by mouth instructed by a computer. The relationship between humans and technology will be improved in every aspect of our environment, but the better science increases, the less mistakes will take place. I feel that this article was straight forward and gave a good insight about our future.

The Frontier Between Us

by Jaron Lanier

Katrina Godwin

It is ironic that children can tell someone about the Web, how to use a computer, and speak the jargon, but cannot do simple things like making toast. In a way, it is sad that our society is becoming so dependent on computers. People wish to become more technical and the reason for that maybe the easiness of HTML. Therefore, some may think that other aspects of computers may be as simple. Computers are cultural artifacts because they are only understood by those who know them. Companies have a new door opening up to them as the result of people wanting to learn how to create software. Not only could a company charge a fee for the preparatory course(s), they could also receive profit from the software a person has created. I agree that

technology will continue to bridge gaps between people. People will continue to share ideas and visions with each other for years to come.

Melvin Lee Mattocks

In the world we live in today, it is sage to say that "computation turns out to be a cultural object..." So it is also safe to say that computers can be considered as "cultural artifacts". Well, first of all, to say and believe this statement, one must believe that the entire technological realm of this world is a cultural genre as a whole in this century of drastic change. If a person can believe this and accept this, the statement that "computers can be considered as a cultural artifact" can be implanted in the minds of the believers.

While living yesterday, today, and, if it be God's will, tomorrow, it is clear to see that "a mass culture of technical literacy is being born, especially among children." When computers first came on the scene, it was only a dream of programmers and computer designers to see computers in the homes of families, on desks in large companies, in fast food restaurants, etc. These dreams have clearly become reality. The large companies and fast food restaurants are not the only ones who have taken heed to the new technological booms. The citizens of this great country have made up their minds to become technical. They learn more and more about the computer and how it works, to the point where they are becoming web page designers to devising their own programs.

In the next ten to fifty years, we can predict what changes will be made in the computer development industry. The one thing we cannot predict are the people. How long will this new expanse culture live? Will it just be another era, such as that of the 70's and 80's. This is important because everything in this computer world is not as user friendly as a book. Some of the hardware is hard to master.

Surprisingly, computer science is the only culture not concerned with beauty. "We thought we were making invisible tools." "We've been granted a surprise franchise as culture creators." We can only keep on track that we are to make many changes in the setup of so called "ugly" software systems. Systems such as MS-DOS is an example of the "ugly" software systems. "A hard fact of life is that ugliness in software is worse than ugliness in other art forms because it is less perishable. Layers of software become locked in place when new layers refer to them, and

ugliness from lower layers percolates upward." Through this it is believed that MS-DOS will be around for a while.

Now we must think of ways to make "beautiful software." "Beauty requires an awareness of human affairs outside the computer." Not seeing these human affairs outside computers is a definite way that computer unattractiveness comes into being. "When software design decisions aren't made in reference to human concerns, they can only be made in reference to each other,..." This may lead to things that may seem as nonsense to a common user. Computers, if considered as a cultural artifact, "are cultural artifacts,...intelligible only to those who know them." It's like saying a person who can't relate with a computer expert may see a computer and something like a video cassette rewinder the same.

Through these new computer pioneers, we will see more creators in this computer driven world rather than just users. When people begin to create their own types of systems, they can inpute the common humans version of beauty into what ever they may design using the technological knowledge they gained by their own free will. there are already areas opening up for companies to service those people who want to create instead of buying thins already created.

Another topic that this new frontier has no hand is the question stated as "Can the ease of HTML be factor in people wanting to be more technical?" Well, I think this is true because people have learned to design homepages and their own sites. It gives them a broader peripheral view of what a computer can do, and in this they would want to be more technical, and so they learn more and accomplish more.

Donald Charity

The world of predictions is focused on computer science more so than the evolution to society. A lot of people thought that computers have to be popularized but over the years people made computers popular. A brand new era of technological advances has dawned on our society mostly among children. HTML and Java has become part of everyday vernacular among children. The problem presented in this article is the development of the self-aware computer with programs designed without the human dependency in mind but the computer depending on itself. If society closes the gap between us and the computer, we become unnecessary. It is important to keep the human factor involved in the development of technology.

Bernard Bailey

This article tells us how Computer Science has really emerged as a cultural art. In my opinion, I do believe the computer world is an art form. I say this because like art, the computer world uses lots of components that all come together to give us the technology we have today. But to me mostly, the people who have to work with them everyday enjoy the computer world. Not many old or middle-aged people understand the computer technology, but children have a great understanding for computers, which makes me agree with this article.

To me, computers are artifacts because the computer itself is made up of software and hardware that all must come together in harmony. When the software and hardware come together, it produces a machine that is unique and can perform tasks that are difficult to complete. I think creating an area in which people can build their own computers will be difficult to do. The reason I say that is because that it will take a long time to get the people to the point where they can build their own computers. By the time people are prepared to make the computers, the companies would have lost more money to help them, which will not be replaced through the selling of the computers. The influence of HTML(Hyper-Text Markup Language), has made people become more technical because with HTML, ordinary people are now creating webpages for themselves. Without HTML, I believe there would be less interest in the computer world, but now that there is HTML, it has given everybody a reason to be interested in the computer world.

Communications Technology and Its Impact by 2010

by David J. Farber

Katrina Godwin

I believe that most of the technological problems that are being addressed will be put off on the next generation. This should not be the solution. If a problem is spotted, ideas on solutions to the problem should commence. This way, a solution is bound to be found. I think that everyone cannot keep up with the hardware. Most of the manuals are hard to understand and some people

do not have the "know-how" to do such a task. The Web has already become a commercial mechanism. Just about every business and television show has a website address. Numerous amounts of information and applications are only available on the Web. There definitely needs to be guidelines set on what should be on the Web. On the contrary, if a government filters the content of the Web for its citizens, it would be a form of communism. There has to be way to do it so no one's rights will be violated. Hopefully, a compromise will be reached to solve this controversy

Melvin Lee Mattocks

In the world today, being that we are about to enter into a new millennium, it is safe to say that the web is definitely a viable commercial mechanism. Since the beginning of the Internet rave, the population of net users have grown tremendously. The commercial world has taken this into great consideration and they are using the web as a marketing mechanism. You can buy just about anything on the Internet. From cars to houses, magazines to shoes.

The next generation of consumers and capitalists are being brought up into this highly technologically challenging world. The key question now is "Can everyone keep up physically with the hardware that is being produced?" Well, the key thing about keeping up with something is the persons dedication and willingness to accept the hardware and then becoming aware of the hardware. There are still many people who chose not to keep up with the new forms of communication, such as e-mail, the Internet, and cellular phones. It would be hard for them to cope with everyday life. Most of the world will be wired into a large communicable net.

There are problems that may arise with the connections of countries. Another thing then arises, "Should countries be able to filter content for its citizens?" That question actually depends on the country, actually. There is an unlimited amount of information on the Internet. There are also countries that do not want some of this information exposed to their citizens. Such things as violence, sex, racial topics and representations, and also there are controversial sites on building such disastrous things as bombs. People deserve to see and learn about what actually happens in their world. Even if some countries did follow through with censoring some of the information on the net, it is safe to say that people will learn about it sooner or later, because a curious mind is a determined mind.

Bernard Bailey

This article is about trying to find suggestions for the problems that we have with the technology we have today. It is about trying to come up with solutions in the next ten years instead of waiting for the next generation to come up with a solution. I must agree that we must take care of the problems as soon as possible. For of we do not, it could lead to a problem that may be costly and difficult to solve. So that is why it is important to take care of these problems today.

I believe that the people who will use the technology will not be difficult for them, but for the people that have to develop the hardware, it will be stressful time on them. The developers would be putting all of their efforts into the task and it will take a toll on them. Not only will this be a trying time on the developers, but it will also be hard on their families. I think that countries should filter the content of its citizens so that the citizens so that the citizens can maintain their privacy. By giving the citizens their privacy, the citizens will maintain one of their most important rights. So by doing this, they will not be infringing on the rights of their citizens. The Web to me is a very important commercial mechanism because a person can find all kinds of products on the Web that is not found in your typical store. But the downfall of the Web is that there are some spots that sell products that do not exist, which means your money is being stolen.

Courtney Fields

In the last article, the impact of technology by the year 2010 will be difficult for governments and law enforcement agencies as the technology of networking will be so powerful that spies and terrorists can tamper with the system. There will be problems within the Internet also, in which it will be difficult to censor certain material and filtering out what they would like for citizens to see. I believe that is okay for countries to filter content for its citizens because it prevents businesses and other local federal governments from losing their jobs. Everyone should be able to keep up with today's technology physically, if the proper software and hardware is installed and taught correctly to each individual learning about computers.

However, I feel that communications and technology will be vastly different for everyone and the impact it will bring will be exciting. The demand for satellites will be a necessity and by the turn of the century, they will be used for basically everything which includes, sight, sound, data, and interaction.

Donald Charity

Most of the technological problems that are arising will be given the next generation of people. Such as the Y2K crisis, it will be put off on the next generation of programmers to solve. The Internet has become a mass communication network and will continue into the 22nd century. It will continue to grow, becoming swamped with business opportunities, television, games, with a web address. Already, a lot of information and products are only accessible on the web. In some countries filtering of information off the net is exercised, this action will not give the citizens of that country the full freedom of inquiring information that is free and usable. People should have free access to all information out on the web. People can not keep up with the changes in hardware. History proves that change takes time. For example, when a new care comes out for sale. The result, not everyone goes out and purchases the new car. It's the same with software and hardware, not everyone will go out and purchase the newest hardware. As far as the next generation of people fixing all of the problems with computers is virtually impossible, there is no perfect program which will present a challenge, which in turn will create problems to solve.

Summary

The work that the System Administration team did to the Silicon Graphics Indigo system gave them some insight into what a system administrator does. The students were able to see how time consuming the job can be, but they also got the chance to see the rewards in achieving a task. If this research project is continued next year, the students will be able to dive into more complicated and administrative tasks. We are looking forward to having the other three Indigo systems running so that a small network can be created. The network created will be where the system administration team will be putting their knowledge to use and it won't run the risk of harming the Lester Hall's actual network. They will have their own network and each one will have root/sysadmin rights.

System administration can be a profession that provides a favorable income. The students found out for themselves the importance of knowing their job, how it affects others, and that even though you may have a full-time job, you still have to do research to keep up. While working on their tasks, they saw why system administrators get paid what they do.

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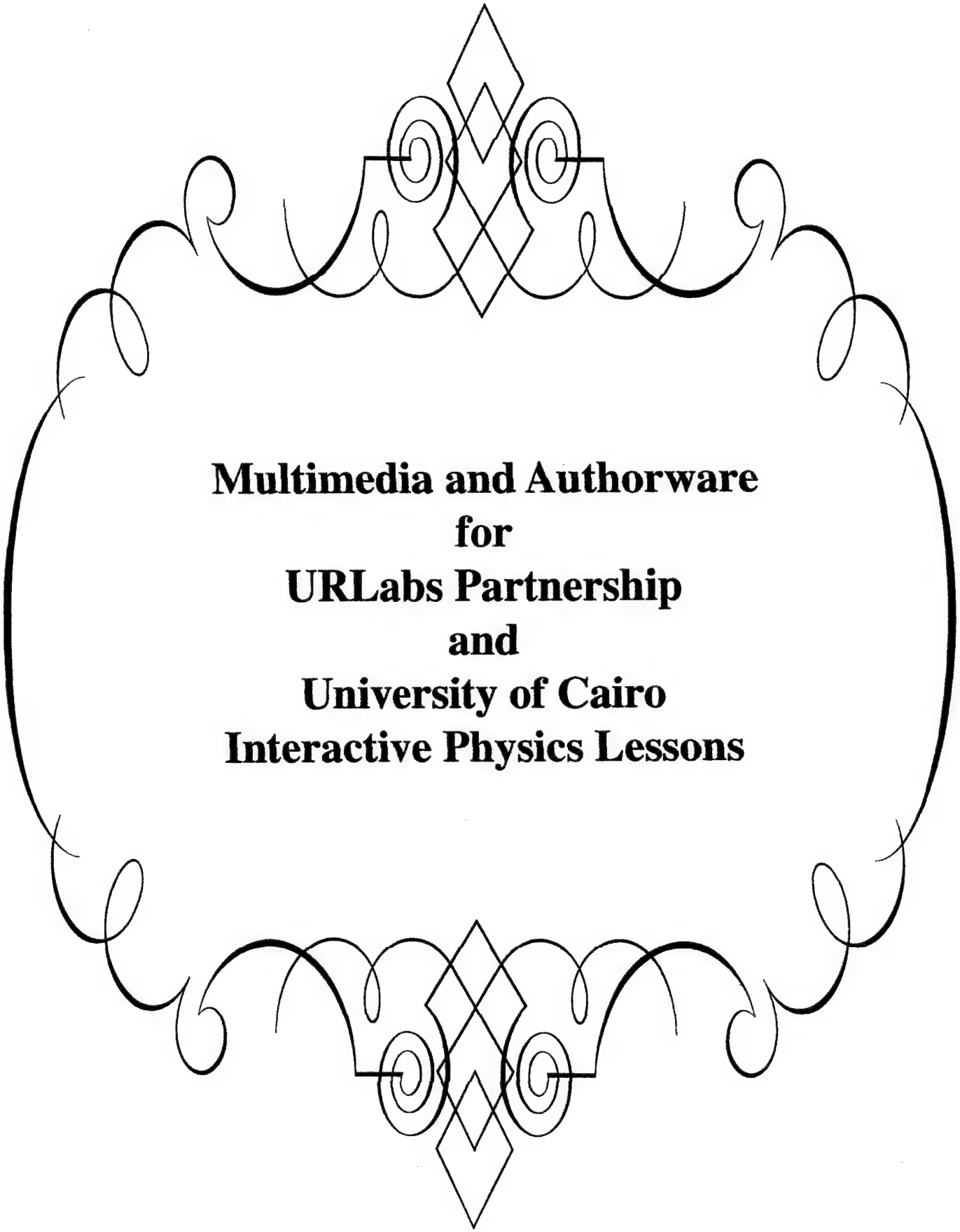
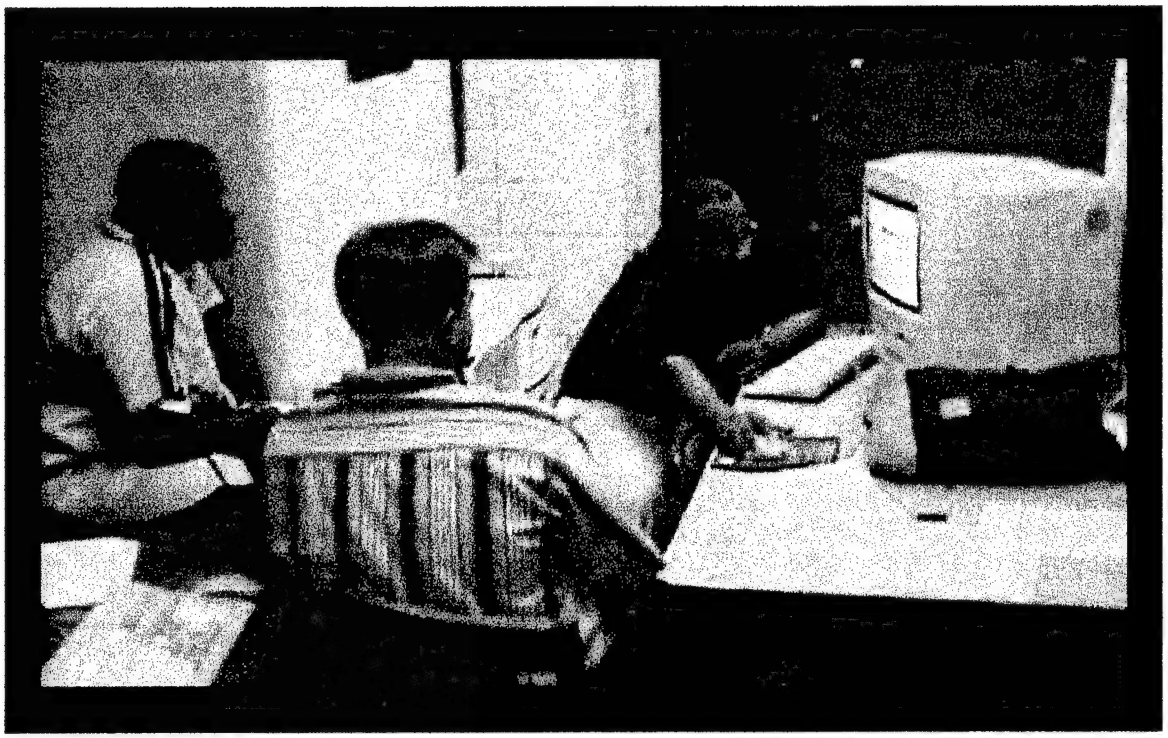


Multimedia and Authorware for URLabs Partnership and University of Cairo Interactive Physics Lessons

Multimedia Research Team



Mentor: Mr. Jeff Wood
Dr. S. R. Atalla

Students: Jonathan Williams
Je'aime Powell
Anglea Mizzell
Gregory Lassiter

Jonathan Williams

Report on the Egyptian Physics Package

The Egyptian Physics package shown to us by Dr. Atalla was an extremely complex and in-depth program. The interaction contained many elements that showed exactly what the power of Authorware can do. The interaction allowed users to input answers, conduct trial experiments by altering an array of variables including wind, speed, weight, mass, and other factors. The interactions were set in a lab-like environment with the first main objective being presented. The majority of the lessons were preceded by an information session in which various key words and concepts were introduced to help better understand the problems that were going to be presented. Most of the lessons were not that difficult to understand, but a basic knowledge of math, physics, and a little calculus would be helpful to better complete the tasks. Many of the interactive modules in the application were very user-interactive. The user could click on a pendulum and drag with the mouse to test the different affects of gravity, weight, and other things of that nature. This is just one example of the interactivity incorporated in the application. Dr. Atalla plans on configuring the interaction for more diverse and complex interactions, the ability to store user input, and to insert tests that can accurately determine the user's knowledge of what he or she has learned and gained from the lesson.

Five of the most interesting things from the package includes

1) The interactivity of the simulations, such as the swinging pendulum, which involves an array of variables and functions to complete the code

2) The organization of the information as each topic was broken down into individual map of a navigation icon to arrange the information

3) The transitions from each screen in which the motion was smooth and appropriate for the item of discussion

4) The buttons, which were uniquely designed for making the user have an easier time going through the program.

5) The menus, which were arranged so that the could be easily seen and observed.

Five recommendations for improvement observed and implemented into the package included

1) The changing of the main menu into hot text to make it easier for linking the pages.

2) The altering of the individual pages of each section into navigational pages to allow easier fluidity between each section.

3) The removal of transitions to increase the speed of the program and allow for less distraction.

4) The definition of new text styles to develop a unique style to body text, question text, and linked text.

5) The removal of backgrounds and bars that clashed with other to lessen the memory usage and make the presentation more attractive.

The URL of Macromedia

http://www.macromedia.com

Throughout my series of examing the Egyptian Physics Software package presented by Dr. Atalla of the University of Cairo, I have found the program to have many attributes in its success. Overall the program, itself has a lot of creative and instructional ideas. As a member of the Multimedia Team under direction of Dr. Linda Hayden and Mr. Jeff Woods, I have found that the program gives good reinforcement on information. For example, at the end of each chapter the Physic package give you a quiz or a test of some sort to make sure that your understandings of the program is accurate. To my opinion, that is a very positive feature about the program because it gives one complete understanding of physics.

The Egyptian Physics Software package has many classy ideas, but it also fails to do simple details. For example, I found that the program has failed to note page numbers and lesson titles within the chapters. I think that these added notations would make it easier for a client to work. I feel as if one should know how many pages are in a lesson and simply knowing when that lesson ends. The Egyptian Physic Software package has also failed to keep fonts style and font size consistency. I feel as if the style consistency would help one to be able to read the information easier. I suggest either use of Arial or Times New Roman. The font size consistency would make the program neater. Neatest in a program makes one more willing to research the package. For example, I suggest that one would

become more of interest towards information if it was compact. Throughout the package, there were continuos use of scrolling because the size of the information was overlapping the screen. I think that the scrolling of information should be eliminated. The information that is needed should be shown on one screen and for the overlapping information, you should simply inputted on another screen.

Thirdly, I also found that the Egyptian Physics Software package has failed to keep color and button consistency. Once again, we talk about neatest. The program has many useful ideas, but if the neatest is not there than one interest will not be there neither. As I went through the package, the buttons were different and colors. When one looks at something like this, their interest would fade away.

Overall the Egyptian Physics Software package has several useful information, but the neatest is a tragic downfall. I suggest that you should go back over the package and just implement on the features and neatest, because the information and examinations that you included are positive attributes.

Egyptian Physics Software Package

(Most Interesting features)

(1) *The package included informed and detailed information.*

(2) *The color scheme in the introductory of the included lessons were well put together.*

(3) *The reinforcement of information through examination throughout each chapter was a great idea.*

(4) *The examples that were included in certain problems was also a good idea, because it can help one to understand problems dealing with that content.*

(5) *The movies was another positive attribute towards the package, because it could help one to understand as well.*

Egyptian Physics Software Package
(Recommendations)

(1) *Include Lesson Title on each page concerning the lesson.*

(2) *Include page number of pages. For example page 1 of 12.*

(3) *Use blue text when informing one about hot texts.*

(4) *Divide pages up. Take the use of scrolling throughout off.*

(5) *Keep color, buttons, titles, and font size and style consistency.*

Five recommendations for improving the package

1. All the text on the title page should be in the same font.

2. The optics button the title page should be centered and the colors do not correspond with the color of the text that is already up on the title page.

3. The quit button should have a question behind it, instead of clicking on the button and then the program has been shut down, no question asked.

4. The information within the package should not be distributed out as it is. The information should be summarized within the package for those topics that are basically the same.

Five interesting features of the Egyptian package

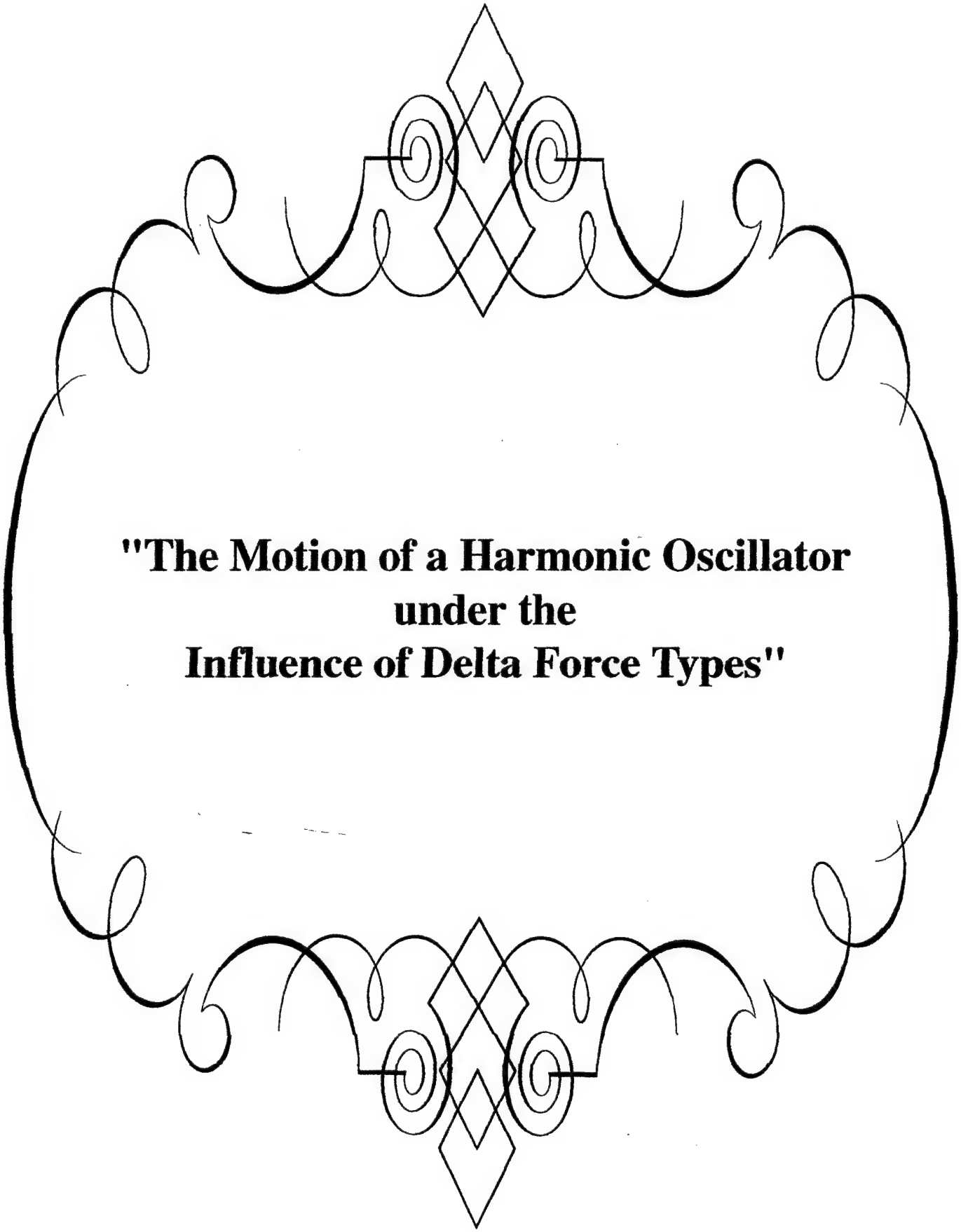
1. The information and how it was distributed along the presentation.

2. The different movies that they used, such as for the drawings to move if you pressed the button. It went right along with the text and gave the viewer a better understanding of what the text meant.

3. The title page was interesting, because as soon as you clicked on the lesson, the information appeared on the screen for the particular lesson.

4. The way they set up the maps to run the program and how they grouped certain maps icons

5. The sound button and how when the button was pressed a voice appeared and started stating the formation that was before them.



"The Motion of a Harmonic Oscillator under the Influence of Delta Force Types"

Physics Research Team

Mentor: Dr. Latif Choudhury

Students: Michael Pugh
Lakisha Mundon
Alicia Jones
Santiel Creekmore

Motion Of A Harmonic Oscillator Under The Influence Of Delta Type Of Forces

S. J. Creekmore,M. D. Pugh,A M. Jones, and L. Mundon*

April 10, 1999

1 Abstract

In this work we set up the equation of motion of a mass according to the Newton's second law of motion. The mass is tied to the spring. It is now subjected to the simultaneous action of air resistace and a sequence of delta-function of forces.It leads us to a second order inhogeneous linear differential equation. We solved the equation rigorously using residue theorem of complex variable. All these solutions are obtained under different possibilities of parameters introduce in the problem. We then develop a Mathematica program to plot three dimensional diagrams of the displacement as a function of time and natural frequency and under different parametric restrictions.

2 Introduction

A spring is a very important device which lets us visualize physical problems in a simplified fashion. If we tie a mass to the spring and allow it to move on smooth plane, it will execute undamped simple harmonic motion. If however we assume that the surface is not totally smooth the mass will experience a resistance opposing the motion. In that case the vibration of the mass will experience damped vibration. The same effect will also be experienced by the mass if we incorporate air resistance. We can subject the mass to a periodic force. We can also subject the mass to a delta-function type of force. This work deals with effect of superposition of such delta type of forces. In section 2 we develop the mathematical formulation of the problem by setting up a differential equation. In section 3 we solve it first for single delta type of force and then for the superposition of several such forces.In section 4 we develop a Mathematica program to develop a graphical representation of the position as a function of t and other parameters. In section 5 we discuss the results.

3 Mathematical Formulation

Let us start with a spring one end of which is tied to a wall. On the other end we tie a mass m. We allow the mass to slide on a rough plane. We then subject the mass to delta function type of

*Mentor: Latif Choudhury

kick. From Newton's second low of motion the differential equation satisfied by the mass is given by relation:

$$m\frac{d^2x}{dt^2} + b\frac{dx}{dt} + kx = a\delta(t) \tag{1}$$

We can change the equation into the following form if we define $\gamma = \frac{b}{2m}$ and $\omega_0 = \sqrt{(k/m)}$:

$$\frac{d^2x}{dt^2} + 2\gamma\frac{dx}{dt} + \omega_0^2 x = \frac{a}{m}\delta(t) \tag{2}$$

The general solution of Eq.(2)is given by

$$x = x_h + x_p \tag{3}$$

where x_h and x_p satisfy the following equations:

$$\frac{d^2x_h}{dt^2} + 2\gamma\frac{dx_h}{dt} + \omega_0^2 x_h = 0, \tag{4}$$

and

$$\frac{d^2x_p}{dt^2} + 2\gamma\frac{dx_p}{dt} + \omega_0^2 x_p = \frac{a}{m}\delta(t). \tag{5}$$

There are three different relationship between ω_0^2 and γ for which we get different solutions. We only look for solutions where $\omega_0^2 > \gamma^2$. Under this condition we get damped harmonic oscillation for x_h

$$x_h(t) = Ae^{-\gamma t}cos(\Omega t + \theta_0) \tag{6}$$

where $\Omega = \sqrt{(\omega_0^2 - \gamma^2)}$.

4 Particular Solution

We can rewrite the differential equation Eq.(5)as follows:

$$Lx_p(t) = \frac{a}{m}\delta(t) \tag{7}$$

where we have defined

$$L = \frac{d^2}{dt^2} + 2\gamma\frac{d}{dt} + \omega_0^2 \tag{8}$$

We know that a delta functon can be expressed by an integral representation

$$\delta(t) = \int_{-\infty}^{\infty} e^{ikt}dk \tag{9}$$

We can easily show the particular solution $x_p(t)$ can now be expressed as follows:

$$x_p(t) = \frac{a}{m}\int_{-\infty}^{\infty} L^{-1}e^{ikt}dk = \frac{a}{2\pi m}\int_{-\infty}^{\infty}\frac{e^{ikt}}{(ik)^2 + 2\gamma(ik) + \omega_0^2}dk \tag{10}$$

The denominator within the integral has two roots for k, namely $k_1 = \Omega_1 + i\gamma$, and $k_2 = -\Omega_1 + i\gamma$. In complex k-plane the zeroes of the denominator lies in the upper half plane. These are simple poles. We can thus close the upper half plane by a large circle as shown in the Fig.1. We can use residue theorem and evaluate the integration of Eq.(10). The integration over large circle drops out in the limit $R \rightarrow \infty$ The integration along the real line then yields:

$$x_p(t) = \frac{a}{m\omega_1} e^{-\gamma t} sin\Omega_1 t. \tag{11}$$

5 Repeated Delta Forces

We now superimpose several delta type of driving forces at periodic interval as given by the relation:

$$F_D = \sum_{i=0}^{N} a_n \delta(t - n\tau). \tag{12}$$

If τ is a fixed time interval the force can be interpreted as a driving force which is repeated after every time interval τ N times. This can be imagined as superposition of repeated kicks on the mass by a hammer. The effect of this superimposed force can be easily evaluated. The result comes out as:

$$x_p(t) = \frac{1}{m\omega_1} \sum_{i=0}^{N} a_n e^{-\gamma(t-n\tau)} sin\Omega_1 (t - n\tau) \tag{13}$$

The most general solution of our problem under study is thus given by:

$$x = x_h + x_p = Ae^{-\gamma t} cos(\Omega t + \theta_0) + \frac{1}{m\omega_1} \sum_{i=0}^{N} a_n e^{-\gamma(t-n\tau)} sin\Omega_1 (t - n\tau) \tag{14}$$

6 Mathematica Program

Our first pont of action at conducting an anylysis in Mathematica of the two solutions is to plot each equation individually. All constants including the amplitude A, angular velocity ω, damping coefficent γ, phase angle θ, and a mass m are fixed for both solutions. In our case we choose; A = 1, $\gamma = 2$, $\omega = 3$, $\theta = 0$, and m = 2. Both x_h and x_p are plotted over an interval t= [0, 10]. Note that the *xsubp* was used in this part of the analysis of a single delta force. We then overlay the two solutions for comparison. We see that *xsubp* is significantly less in orders of magnitude than x_h. We then plot the sum of x_h and x_p. We also used Mathematica to see these equations in a three dimensional graphs also. The three dimensional graphs provided us with a closer look at the how much difference time can make in a function with a delta force.

7 Conclusion

We were successful at constructing an equation that describes a harmonic oscillator which included air resistance a spring force and an outside delta type of force. We solved the model using two

solutions described by x_h and x_p. We observed the damping effect of x_h over an interval of t = [0, 2]. We also made a comparison of the graphs by overlaying them.

8 Acknowledgments

First and foremost we would like to thank Dr. Linda B. Hayden and the entire Faculty and staff of the ONR program for all of the help, facilities, and encouragement provided for our research. We would especially like to thand Dr. A. L. Choudhury for all of the time, patience, and knowledge that he share with us.

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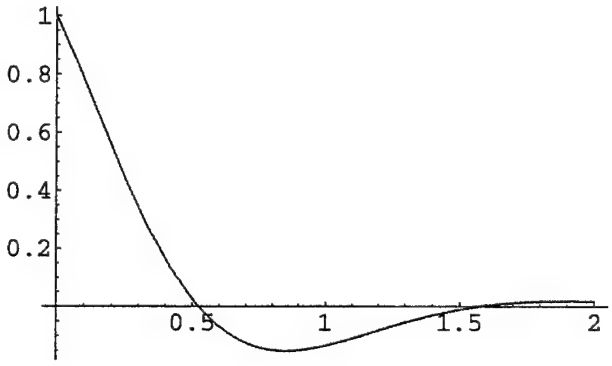
```
A = 1;
```

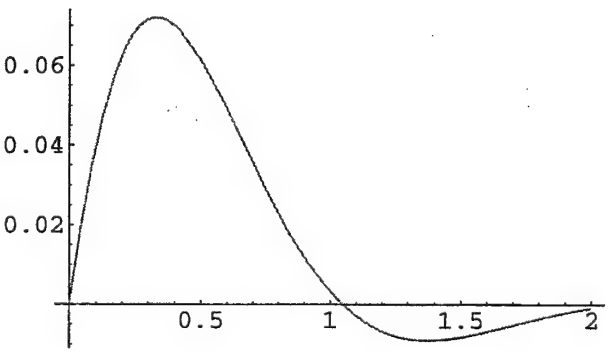
In[3]:=
```
γ = 2;
θ = 0;
ω = 3;
m = 2;

xh[t_] := A Exp[-γ t] Cos[ω t + θ]
Plot[xh[t], {t, 0, 2}, PlotStyle -> {RGBColor[1, 0, 0]}, PlotRange -> All]
```



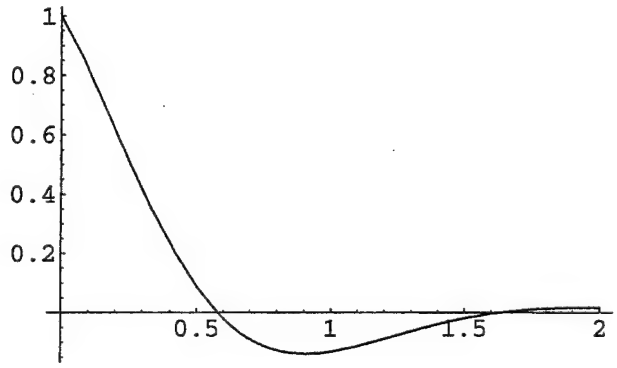
Out[4]= - Graphics -

In[6]:=
$$x_p[t\_] := \frac{1}{m\,\omega}\,\text{Exp}[-\gamma\, t]\,\text{Sin}[\omega\, t]$$
```
Plot[xp[t], {t, 0, 2}, PlotStyle -> {RGBColor[0, 1, 0]}, PlotRange -> All]
```



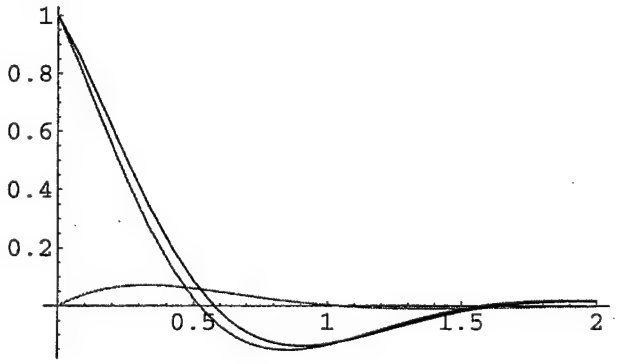
Out[7]= - Graphics -

In[8]:=
```
Plot[xh[t] + xp[t], {t, 0, 2}, PlotStyle -> {RGBColor[0, 0, 1]}, PlotRange -> All]
```



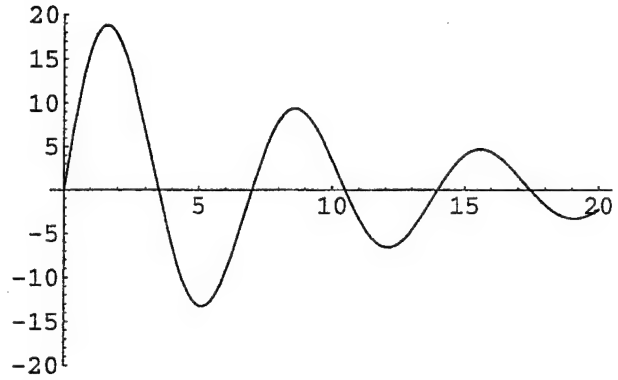
Out[8]= - Graphics -

In[10]:=
```
Plot[{xh[t] , xp[t], xh[t] + xp[t]}, {t, 0, 2},
 PlotStyle -> {{RGBColor[1, 0, 0]}, {RGBColor[0, 1, 0]}, {RGBColor[0, 0, 1]}},
 PlotRange -> All]
```



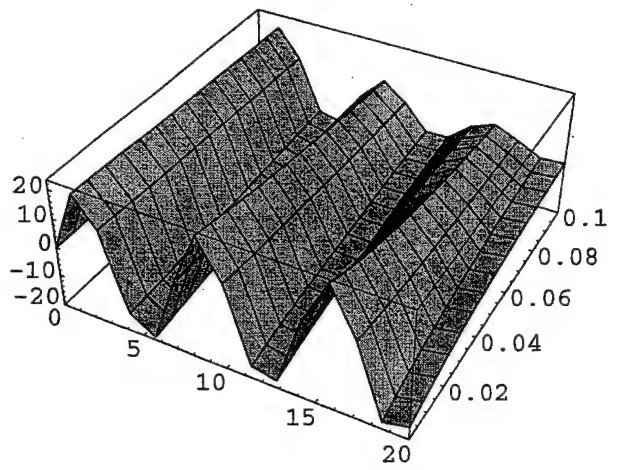
Out[10]= - Graphics -

In[15]:=
```
γ = .1;
Ω = .9;
τ = .0001;
m = 1;
x_p[t_] := 1/Ω Sum[Exp[-γ (t - n τ)] Sin[Ω (t - n τ)], {n, 1, 20}];
Plot[x_p[t], {t, 0, 20}, PlotRange -> {-20, 20}]
```



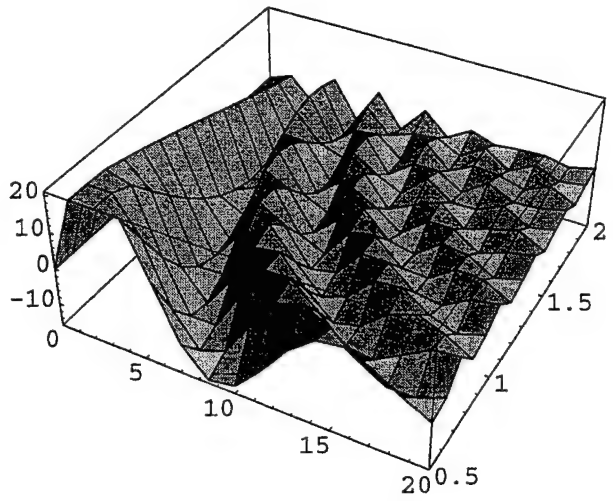
Out[15]= - Graphics -

In[16]:=
```
Plot3D[x_p[t], {t, 0, 20}, {γ, .0001, .1}]
```



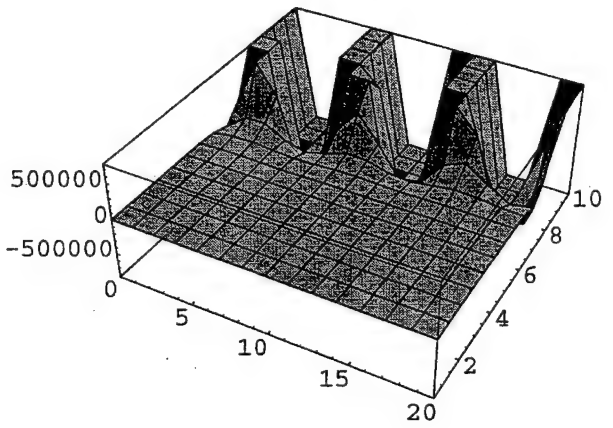
Out[16]= - SurfaceGraphics -

In[17]:= **Plot3D[x_p[t], {t, 0, 20}, {Ω, .5, 2}]**

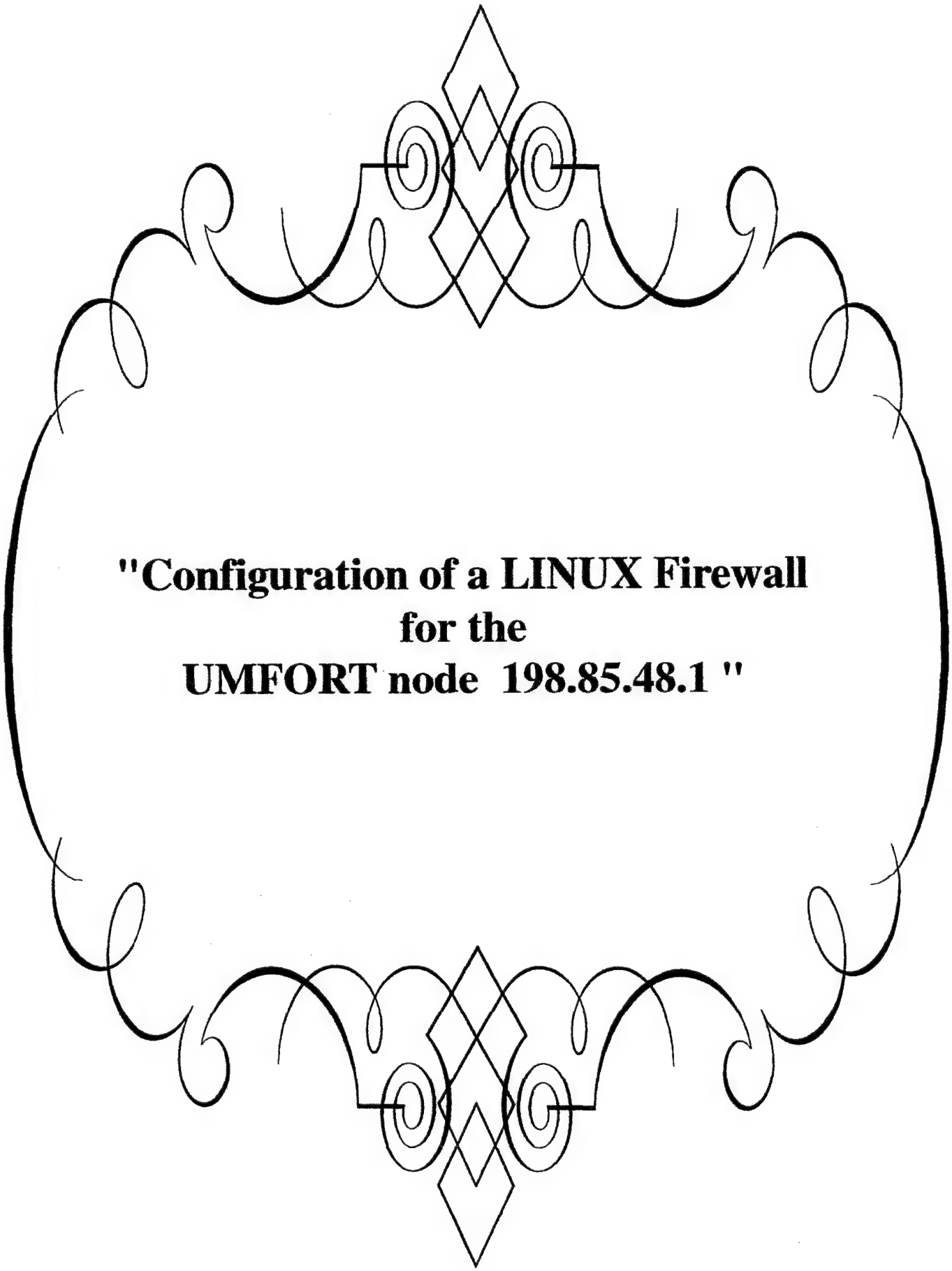


Out[17]= - SurfaceGraphics -

In[18]:= **Plot3D[x_p[t], {t, 0, 20}, {τ, .5, 10}]**



Out[18]= - SurfaceGraphics -

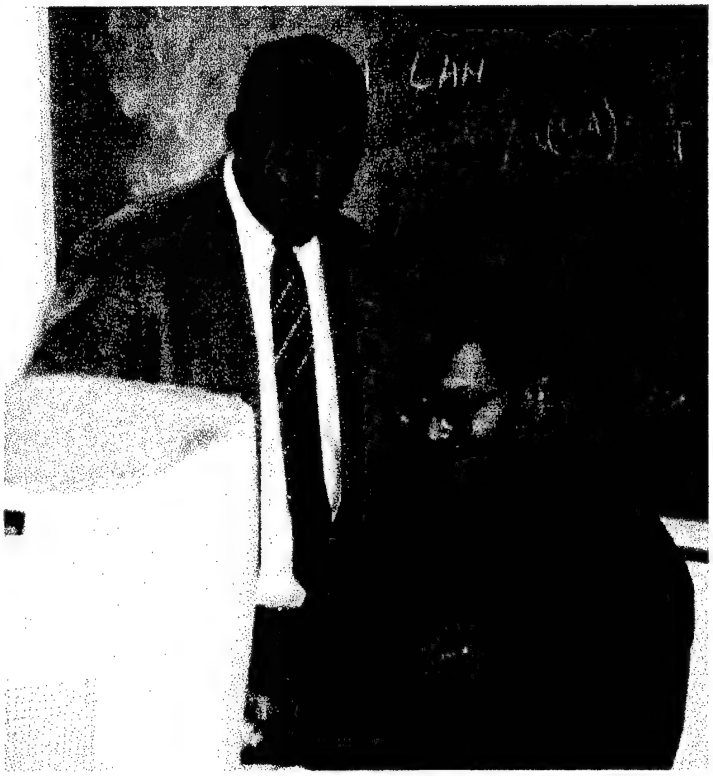


"Configuration of a LINUX Firewall for the UMFORT node 198.85.48.1 "

1998-99 Networking Team

Mentors:

Dr. Linda B. Hayden
Mr. Robert Harris
Ms. Chonda Gayle



Team Members:

Kuchumbi Hayden
Antonio Rook

1998 - 1999
LINUX FIREWALL
Research Team Abstract

1. Write a one(1) page technical description of the Linux Firewall server that Mr. Robert Harris has installed.

2. Interview Mr. Harris to document the current network status along with future plans and timeline for expansion of the firewall; major tasks to be completed.

3. Develop a bibliography/reference page using all the books that Mr. Harris has used. Include system manuals, on line references and articles.

4. Write summaries on two article.

- ***"Computer Security Past and Future"***
  By: Aurobindo Sundaram

- ***"An Introduction to Intrusion Detection"***
  By: Michael Neuman & Dinana Moore

5. Install two O2 Workstations. One in Dr. Hayden's office. Complete the installation of the one in Chonda's office. Make a backup of each machine when the installation is completed.

A firewall is a system or group of systems that enforces an access control policy between two networks. The firewall can be thought of as a pair of mechanisms: one which exists to block traffic, and the other which exists to permit traffic. Some firewalls place a greater emphasis on blocking traffic while others are permitting traffic. The most important thing to recognize about a firewall is that it implements an access control policy. The purposes of firewalls are to restrict people to enter at a carefully controlled point, prevent attackers from getting close to your other defenses, and restrict people to leave at a carefully controlled point. A firewall is most often installed at the point where your internal network connects to the Internet. All traffic coming from the Internet or going out from your internal network passes through the firewall.

The Networking team has the task of documenting and assisting with the configuration of the LINUX firewall for the Umfort node. Umfort node supports undergraduate research in science and mathematics at Elizabeth City State University. The Linux server is designed to protect the network of workstations, on Umfort node, from any user who may gain unlawful access to our network. To configure the firewall, the team members must first understand the components that are chosen to implement the firewall.

The server will be housed on a PC. The PC will consist of the following components: a motherboard consists of a IDE controller, two serial ports along with one parallel port, floppy disk controller, CS 4232 Audio, MPU-401 Midi and a Yamaha OPL3. The SCSI ID assignments are a Quantum XP34550W hard disk, a HP 1534 4mm DDS (Dataphone Digital Service-Accnet) tape drive, a Toshiba 3801 CD-ROM driver, and a Symbios PCI SCSI Controller. The PC also has a 4.5 GB hard drive and will upgrade its' RAM size from 64 MB to 128 MB. It will have the following IP address and name: 198.85.48.1 Lester1 .

A firewall software package known as Redhat 5.2 was installed on this LINUX server. This operating system includes items such as Internet tools, Development tools, Multimedia tools, a X Windows Sytem, and Publishing. The features included were Internet tools consist of high performance HTTP and FTP servers, virtual housing, simple network configuration and dial-up networking support. The development tools available in Redhat 5.2 consists of programming languages such as C, C++, FORTRAN, Pascal, Assembly, Perl, Python, and LISP. The multimedia tools allow image manipulation, retouching, and paint programs along with supporting soundblaster compatible sound cards and image viewers.

Our LINUX server will be designed to be either a filtering and proxy server. A filtering server protects the network by filtering out all unwanted address and by only

accepting blocked or segmented addresses. It's disadvantage would be not allowing the user to use the FTP or telnet commands. With a proxy server, however, blocked addresses are required and it still allows the user to telnet and FTP.

Our future network setup will consist of two SGI 02 workstations, one SGI Indy system, and one PC. The LINUX Firewall will solely be placed on a PC will no other applications on that system. The Firewall is configured to allow no telnets into our LAN, which means that there will be no way to gain access to our network from the outside world.

The webpage server (Nia) will be placed outside of this firewall for outsiders to access the webpages. Nia will also be converted from an SGI Indy workstation to an 02 workstation.

Umfort will now be used for receiving and sending e-mail messages. The e-mail server will stay on a SGI Indy machine placed outside the firewall. Umfort is currently our file server and will be switched to an 02 workstation and renamed from Umfort to Locus. Locus is the last name of a past employee (Mr. Umfort Locus) at ECSU that initially developed the computer science department at ECSU. Locus will be apart of our LAN and therefore inside the firewall. The deceptiveness of the firewall is the users will not notice any difference in there usage on the systems, however, the firewall will not allow telnet sessions from a outside source.

Computer Security Past and Future
By Michael Neuman and Diana Moore

The authors explains in the title of how computer security was started to now where it stands as technology has begun to evolve the security aspect of computer security. They describe how the Bell-LaPadula security model was first developed 20 years ago and that it was the basis for nearly all computer security work. Nine years later, some specific recommendations for implementing a secure computing systems were born. And two years after that Computer Security Act of 1987 was enacted, making subversion of US government interest computers illegal. Certainly, a great number of technical advances have been made, particularly in the areas highlighted in this issue: authentication, intrusion detection, and secure voting. Unfortunately, we aren't any closer to obtaining real security for our computers and networks. Computer security incidents are definitely on the rise as the Internet grows. More than 93.6% of all companies surveyed report at least one major security incident, and 43.3% of those companies have been victims more than 25 times. While many technologies, such as firewalls, intrusion detection systems, audit reduction tools, and network security scanners can and should be implemented to better defend a site, these tools simply make the intruders job more time-consuming, not necessarily more difficult. Also, requiring an intruder to spend extra time attacking a network is not a deterrent; in fact, many intruders may welcome the extra challenge and will try even harder to win. There has been very little work has been done in the area of response tools. These tools need to be developed to help an investigator monitor the intruder, determine the extent of damage, collect any of the intruder, and most importantly, track the intruder back to the source machine and make a positive identification. And until that area has been researched more in depth, the number of security incidents will continue to grow. The future plans include work on defensive and offensive tools to secure and defend a site, organize better laws and response teams to aid in the capture and prosecution of intruders, and education for the entire Internet community. The author stressed the importance that every person, from the general user to the advanced applications programmer, should know what types of holes make systems or applications vulnerable to attack and the enormous liability data loss can mean to a company or individual.

The 1998-1999 ONR Networking Team Report

"Configuration of a LINUX Firewall for the Umfort node (198.85.48.1)"

Team Mentors: Dr. Linda Hayden
Mr. Robert Harris
Ms. Chonda Gayle

Team Members: Mr. Antinio Rook
Mr. Kuchumbi Hayden

Definition of a Firewall

a hardware and/or software platform that restricts the flow of data between networks.

Server Components:

- motherboard consists of a IDE controller
- two serial ports along with one parallel port
- floppy disk controller
- CS4232 Audio
- MPU-401 Midi
- Yamaha OPL3

Server Components: (Cont.)

- SCSI ID assignments
  - Quantum XP34550W hard disk
  - HP 1534 4mm DDS tape drive
  - Toshiba 3801 CD-ROM driver
  - Symbios PCI SCSI Controller
- 4.5 GB hard drive and 64MB RAM
- IP address 198.85.48.1

Redhat 5.2

- Internet tools
- Development tools
- Multimedia tools
- X Windows System and Publishing

Internet Tools

- high performance HTTP and FTP servers
- virtual housing
- simple network configuration
- dial-up networking support

Development Tools

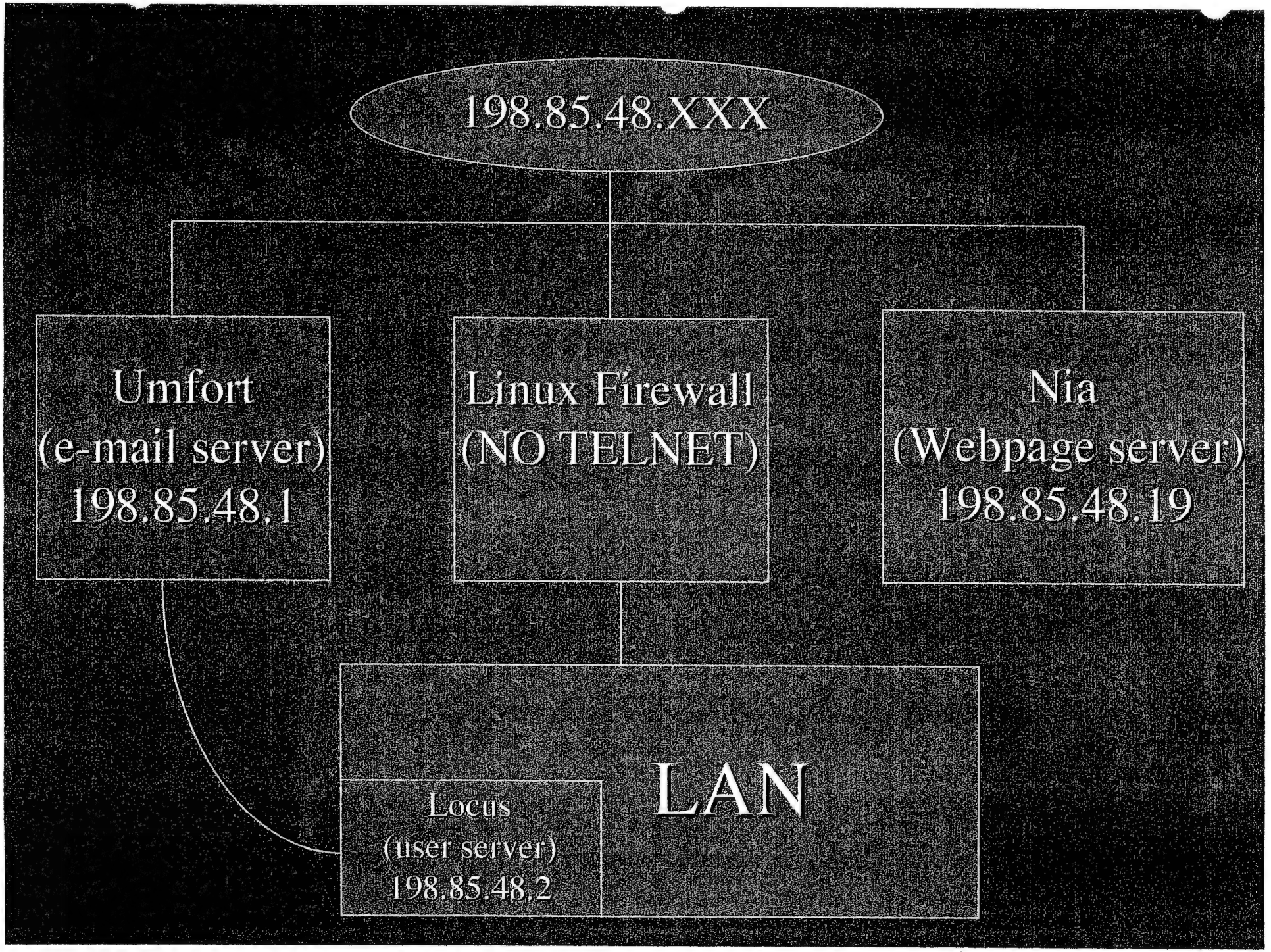
- Several programming languages
  - C
  - C++
  - FORTRAN
  - Pascal
  - Assembly
  - Perl
  - Python
  - and LISP

Multimedia Tools

- image manipulation
- retouching
- paint programs
- supports soundblaster compatible sound cards
- image viewers

Filtering or Proxy Server

- Filtering
  - Advantages
  - Disadvantages
- Proxy
  - Advantages
  - Disadvantages


198.85.48.XXX
Umfort
(e-mail server)
198.85.48.1
Linux Firewall
(NO TELNET)
Nia
(Webpage server)
198.85.48.19
Locus
(user server)
198.85.48.2
LAN

References

- Linux WWW Sites
  - http://www.linux.com
  - http://www.varesearch.com
  - http://www.linuxmall.com
- Redhat WWW Sites
  - http://www.redhat.com
  - http://redhat-security.cg.nu
  - http://src.doc.ic.ac.uk/publick..ges/redhat/docs/redhat-digest
  - http://netsecurity.miningco.com/msub20.htm
  - http://www.u.arizona.edu/~zdq/uniprint.html

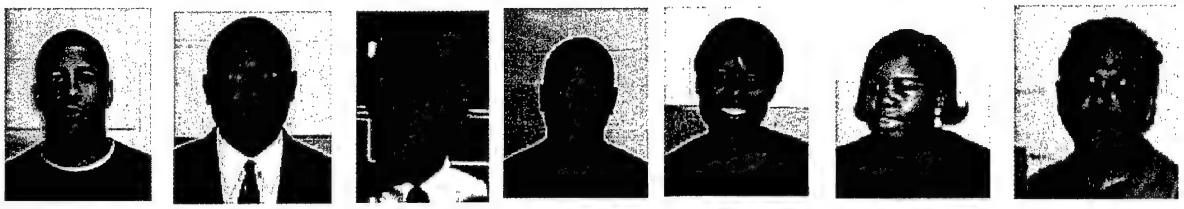
References (Cont.)

- Silicon Graphics02 Desktop Worstation, Product Guide
- Sundaram , Aurobindo "Computer Secuirty Past and Furture"
- Neuman, Michael and Moore, Dinana "An Introduction to Intrusion Detection"
- Goncalves, Marcus "Firewalls complete", McGraw-Hill, 1998
- Muster, John "UNIX Made Easy, Second Edition" McGraw-Hill, 1996

Appendix

- Highlights and Photo Pages
- Honors Convocation Program

ONR Nurturing ECSU Research Talent
1998-99 Undergraduate Researchers



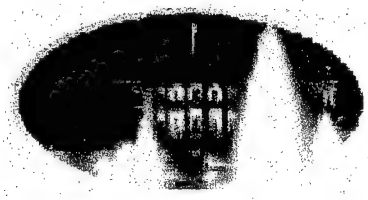
Seniors Shown: Antonio Rook, Derrick Burrus, Kuchumbi Hayden, Santiel Creekmore, Courtney Fields, Lakisha Mundon and Michael Pugh.

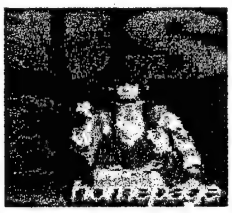
Juniors Shown: Donald Charity, Katrina Godwin, Sheri Joyner and Alicia Jones.

Sophmores Shown: Joseph Gale, Angela Mizelle, Jonathan Williams and Je'aime Powell.

Freshmen Shown : Bernard Bailey, Latisha Freeman, Omar Gordon, Tina Lassister, Gregory Lassiter, Melvin Mattocks

Government Site Visit
at Elizabeth City State University By
Earl Hayes, White House Initiative on HBCU's
Anthony Junior, Office of Naval Research
Ron Blakeley, Department of the Army
November 2-3, 1998





Dr. Albert Walker, Vice Chancellor for Academic Affairs meets with representatives from ONR, ARMY and the White House Initiative on HBCUs.

Government Site Visit at ECSU
Schedule of Events

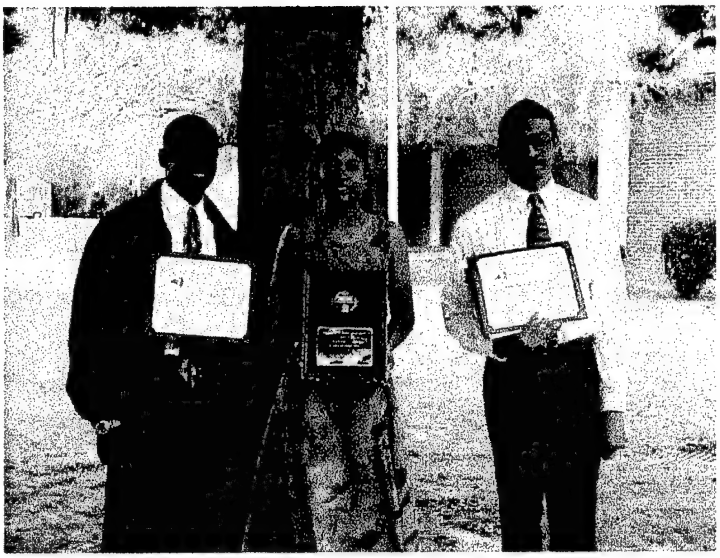
Day One

Time	Appointment Location	Objective
8am	Jenkins Hall Faculty Guide - Dr. Maurice Powers	Biology, Physical Science Departments Review infrastructure, equipment to determine capabilities and needs Visit Planearium Geoscience Department View Dismal Swap video.
10am	Lester Hall Faculty Gudie Dr. Linda Hayden	Math-computer Science-Ariway Science Department Meet Current and Prospective PIs, students Review infrasturcture, equipment to determine capabilities and needs.
11:30am	The Blue Room	Lunch
2:30pm	G.R. Little Libary Faculty Guide - Dr. Deborah Flippens	Video Conference
2pm	Dixion Hall Faculty guide - Dr. Ellis Lawrence	Technology Department Meet current and prospective PIs, students Review infrastructure, equipment to determine capabilities and needs.
3:30pm	Chancellor Burnim's Office	Meet with Chancellor
4pm	Williams Hall Telecommunications Building ROTC	Tour radio, TV facilities Visit unit .
6pm	Muligan's Waterfront Grille	Dinner, party of 10

Day Two

Time	Appointment Location	Objective
8:30am	Institutional Advancement Conference Room, Thorpe Hall	Review Public School Partners Programs Dr. Cahrles Cherry, Dean of Education Dr. Shirley Turnage, ECSU/Roanoke River Valley Consotrium liaison Superintendents.
10am	Academic Affers Conference Room, Thorpe Hall	Dr. Walker, Academic Dean Dr. Robinson, Vice Chancellor for Institutional Advancement Ernie Murphey, Vice Chacellor for Business and Finance.
10:30am	Small Business Center, K.E. White Wauna Dooms, SBTDC Director	
12noon	Luncheon, K.E. White 107	Federal representatives present agency objectives(10 min each) SPCG Director
2pm	Lester Hall Internship Roundtable	
4pm	ONR Research Training Meeting,	Meet ONR Scholarship students

Honors Convocation
Thursday, April 15, 1999



Melvin Mattocks, Katrina Godwin and Bernard Bailey

Donald Charity

Courtney Fields

ONR-NERT Research Program Award

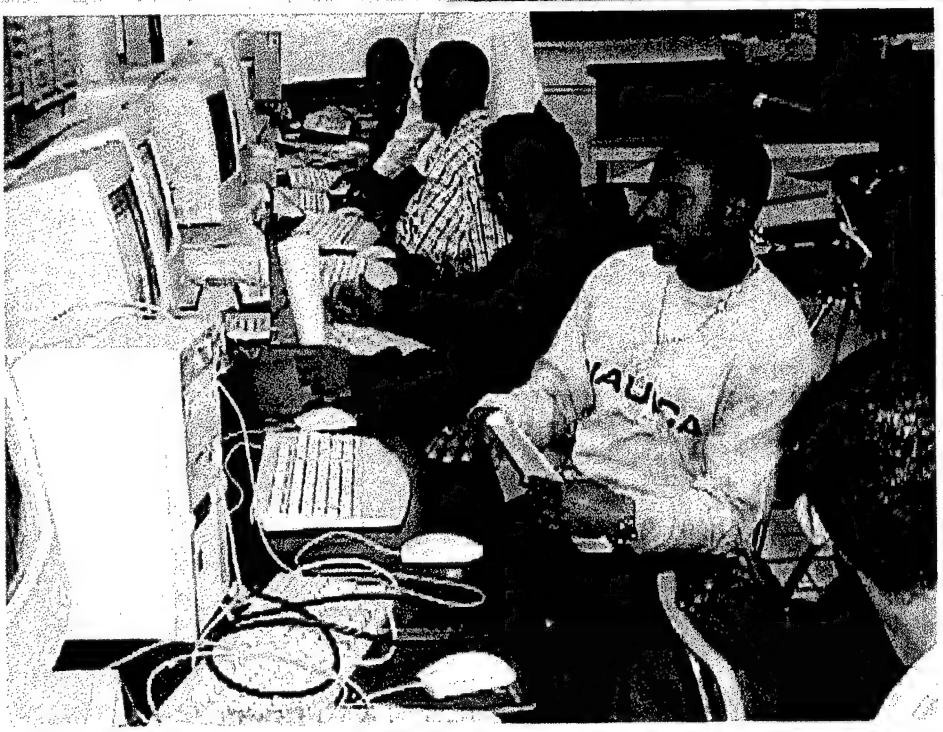
Bernard Bailey
Melvin Mattocks
Je'aime Powell
Kuchumbi Hayden
Omar Gordon
Joseph Gale
Alicia Jones
Lakisha Mundon

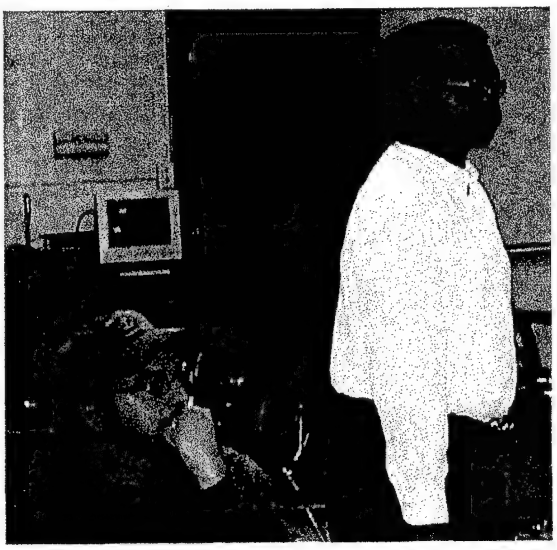
ONR-NERT Research Scholars Award

Donald Charity
Sheri Joyner
Katrina Godwin
Santiel Creekmore

ONR-NERT Award of Excellence

Courtney Fields





MATHEMATICA TRAINING

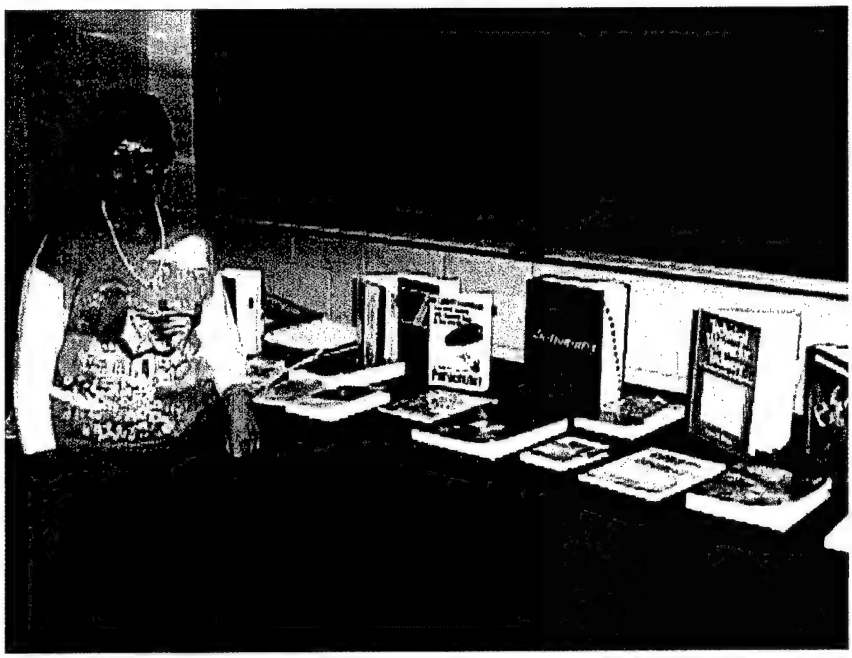
by

Dr. D. Sengupta

Mr. B. Jordan

Jan. 19 & 21, 1999

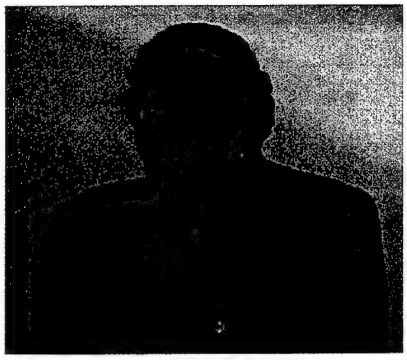
Writing Tips for Science and Technology Students

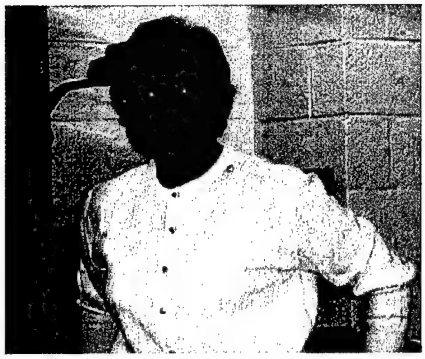


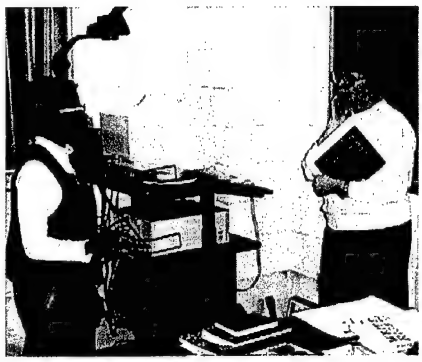
K. Dean George

Technical Writer &
Editor

Spring, 1999

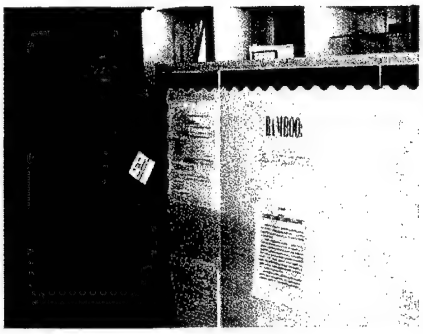
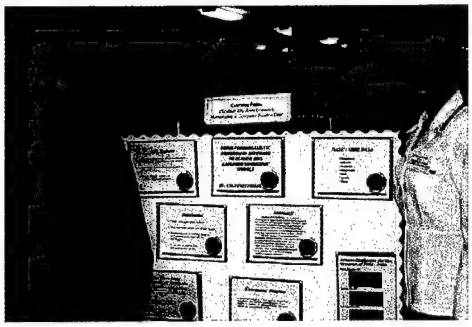


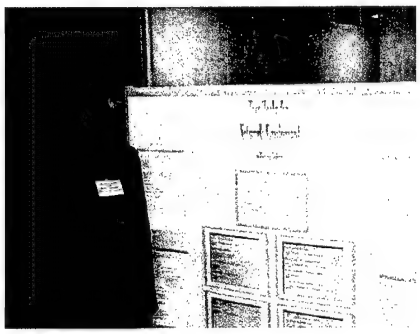
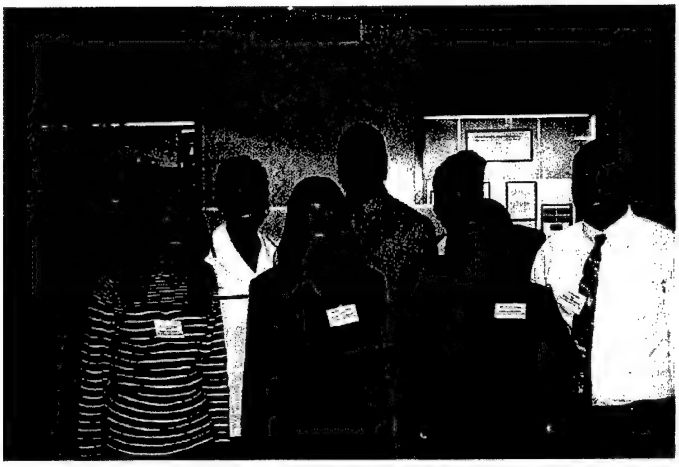




HIGHLIGHTS SOARS 1998 at North Carolina A&T University

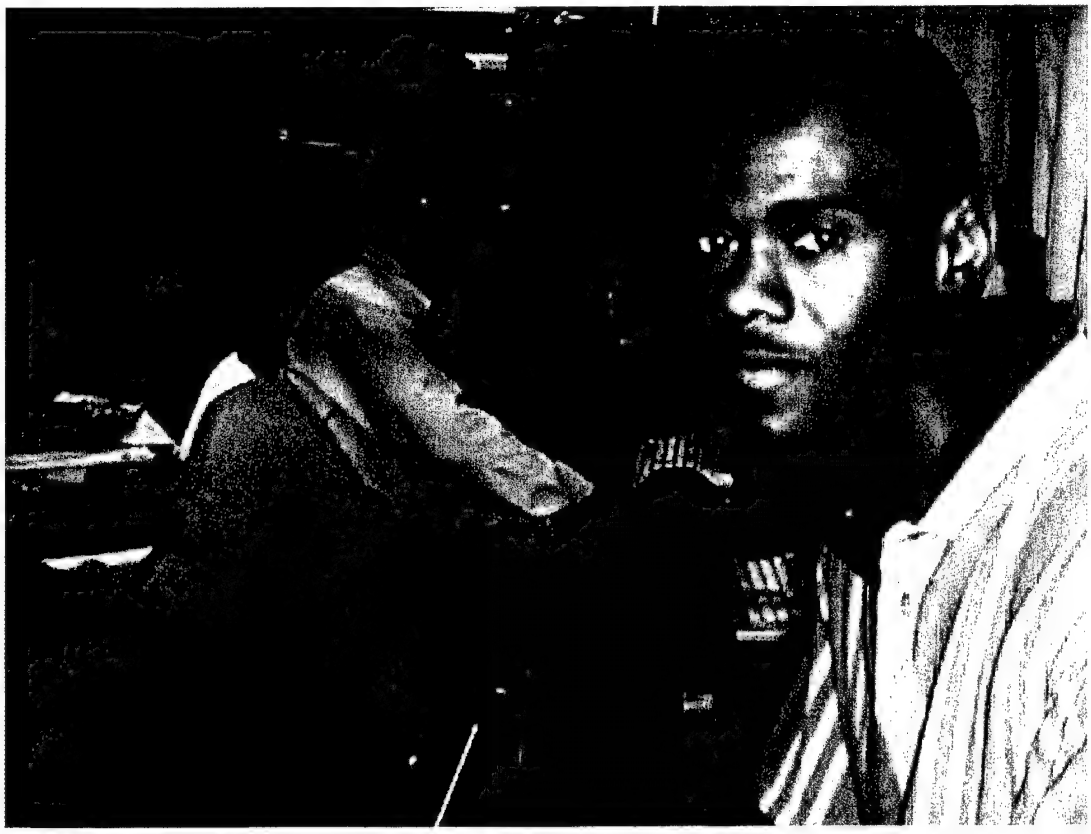


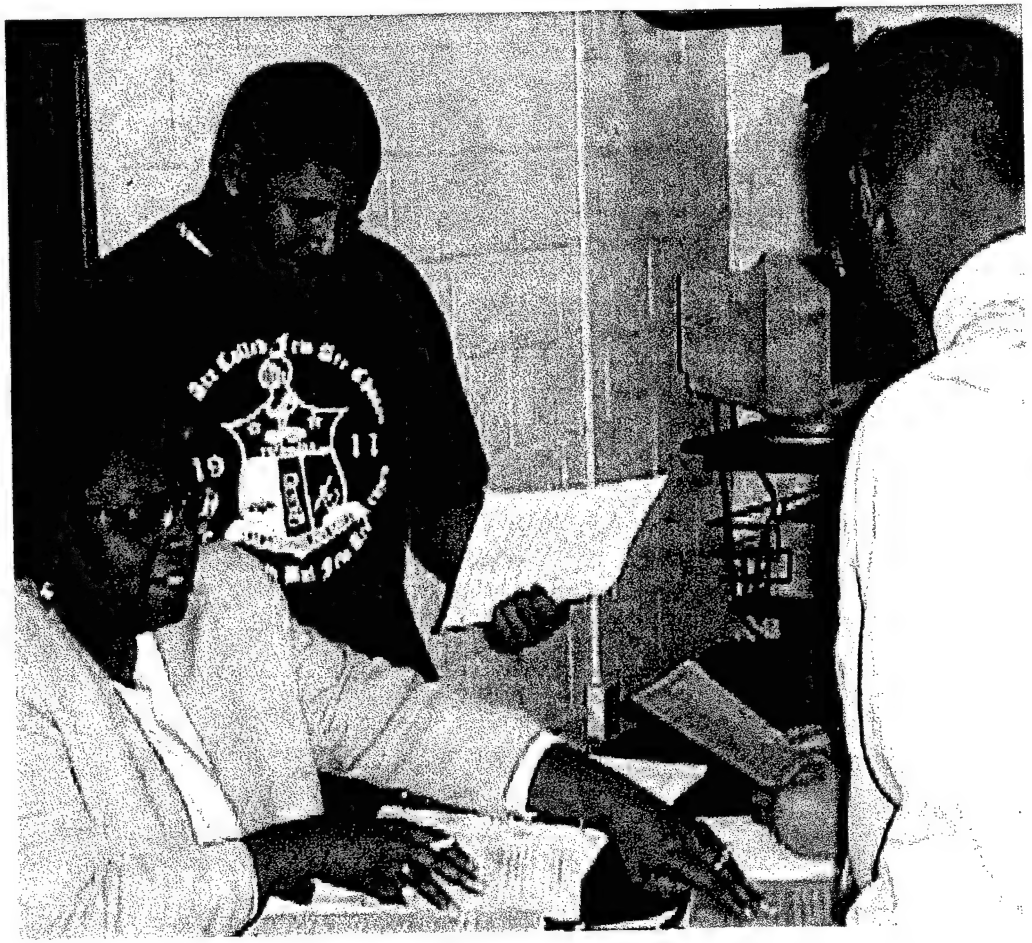

Left: ECSU Undergraduate Researchers attended the Awards Banquet. and made poster presentations of ressearch projects.

1998-99 NERT Program Highlights

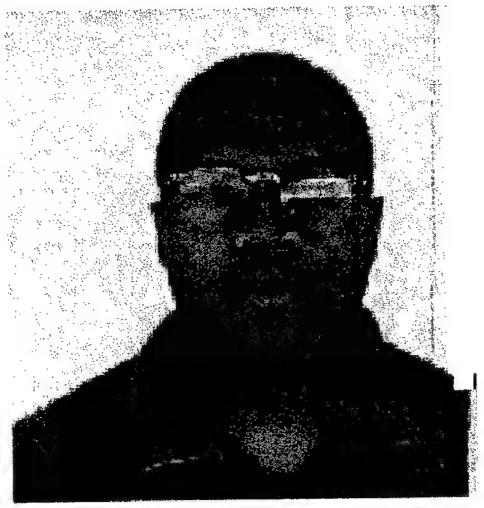


Mr. Christopher Roberts(top right), ECSU Physics major class of '96 and current graduate student in Mechanical Engineering at Howard University is shown talking with ECSU students about the Goddard Space Flight Center/Howard University Fellowship in Atmospheric Science (GOHFAS). 3-23-99

1998-99 N.E.R.T. Program Highlights



Dr. Hayden discusses the Task Sheet requirements.



Timothy McCray, Web Security System Analyst with the National Security Agency was the guest of honor at the 1998-99 closing program. Tim completed his masters degree in CS at Hampton University

Fall 1998
ONR Student Research Meetings

Room 116 Lester Hall 5 - 6:30pm
Pizza will be served
Required to Attend

Upperclassmen		Incoming Freshmen
Burrus, Derrek	Joyner, Sheri	Bailey, Bernard
Charity, Donald	Jones, Alicia	Freeman, Latisha
Creekmore, Santiel	Mizelle, Angela	Mattocks, Melvin
Fenner, Arthur	Moore, Ayonda	Gordon, Omar
Hayden, Kuchumbi	Mundon, Lakisha	Lassiter, Gregory
Gale, Michael	Powell, Je'aime	Lassiter, Tina
Godwin, Katrina	Rook, Antonio	
Fields, Courtney	Williams, Jonathan	

Scheduled Activities

August 25	Introductions, Program Overview, Photos
August 27	Task Sheets,
Sept. 1	Team Reports: Physics, Networking, Visualization
Sept. 3	Team Reports: Multimedia, Fractals/Chaos
Sept. 8	Internship Roundtable
Sept. 10	SHOWCASE Tutorial
Sept. 15	RAPPORT Tutorial
Sept. 17	RAPPORT Tutorial
Sept. 22	HTML Tutorial
Sept. 24	HTML Tutorial
Sept. 29	Desktop Publishing Tutorial
Oct - Dec.	Regular Team meetings

Call 335-3696 or come to room 114 LH for more information.

Sponsored by The Office of Naval Research

ONR - Nurturing ECSU Research Talent

Spring 1999

Research Training Meetings

(Refreshments will be served)

All ONR Student Researchers are required to attend the Tuesday/Thursday training sessions. Meetings are held in 116 LH and begin at 5 pm.

Schedule

TTH 5:00 - 5:30pm	Announcement Period
TTH 5:30 - 7pm	
Jan. 12, 1999	Authorware Training (Multimedia Team)
Jan. 14, 1999	Authorware Training (Multimedia Team)
Jan. 19, 1999	Mathematica Training (Brian Jordan and Dr. Sengupta)
Jan. 21, 1999	Mathematica Training (Brian Jordan and Dr. Sengupta)
Jan. 26, 1999	Team Webpages
Feb. 2, 1999	Technical Writing Seminar Introduction
Feb. 4, 1999	Regular Team Meeting
Feb. 9, 1999	Technical Writing Seminar
Feb. 11, 1999	Technical Writing Follow-up
Feb. 13-Apr.4	Regular Team Meetings
Apr. 13, 1999	Final Oral Reports (System Admin, Physics, Multimedia)
Apr. 15, 1999	Final Oral Reports (Networking & Mr. Timothy McCray)
Apr. 22, 1999	Final Written Reports are due.

Elizabeth City State University

ELIZABETH CITY, NORTH CAROLINA

MICKEY L. BURNIM, CHANCELLOR

Honors Convocation

Thursday, April 15, 1999
2:00 o'clock in the afternoon
Moore Hall Auditorium

Elizabeth City State University is a constituent institution of
THE UNIVERSITY OF NORTH CAROLINA

Honors Convocation Program

PRELUDE.....Prelude in C Minor.....Johann Sebastian Bach
Dr. Dangsun Song, *Organist*

PROGRAM

Dr. Albert L. Walker, *Vice Chancellor for Academic Affairs*
- Presiding -

INVOCATION.....The Reverend Derrick Wilkins
Manager, ECSU Academic Computing Center
Graduate, Honors Program

MUSICAL SELECTION.....*"Crucifixion"*.....Adolphus Hailstork
The University Choir
Mr. Billy Hines, *Conductor*

INTRODUCTION OF SPEAKER.....Mr. Blair Todd
Senior, Honors Program

ADDRESS.....Ms. Dorothy Spruill Redford
Manager, Somerset Plantation

PRESENTATION OF AWARDS.....Dr. Lois W. Green
Associate Vice Chancellor for Academic Affairs
Dr. Carol C. Jones
Director, Honors Program
Miss Samantha Royster-Cunningham
Sophomore, Honors Program

CONGRATULATIONS.....Dr. Mickey L. Burnim
Chancellor

ANNOUNCEMENTS.....Mr. Joshua Henson
Sophomore, Honors Program

POSTLUDE.....*"Toccata"* from Symphony No. 5 for the Organ.....Charles-Marie Widor
Dr. Dangsun Song, *Organist*

Special Honors

Certificates Presented by the Honors Program - Awarded to all Students for Spring Semester 1997-98 and Fall Semester 1998-99 (as listed)

CHANCELLOR'S DISTINGUISHED EMBLEM AWARDS

Scholars' Blazers

Chenay Beamon
Tarsha Darden
Scott Forbes
Summer Sayers
Delicia Wright

THE HONORS PROGRAM

Certificates of Merit

Colina Bartlett
Chenay Beamon
Alayna Benson
Derrek Burrus
Tyrell Carr
Kizzy Crawford
Tarsha Darden
Peter Eley
Steven Gilchrist
Katrina Godwin
Bobbie Hayman
Joshua Henson
Nicole Hoffler
Clarice Johnson
Arnold Jones
Neil Jordon
Sheri Joyner
Loretta Lane
Waquita Lane
Harold Lawson
Christie Long
LaVar Mizelle
Ayonda Moore
Adriane Patterson
Jeaime Powell
Chanteal Reynolds
Paula Rose
Samantha Royster-Cunningham
Tinkia Ruffin
Felicia Saunders
Tracy Taylor
Cecilia Thomas
Tashia Tillett
Blair Todd
Jarrod Turner
Natalie VanHorn
Albert Walker, III
Lisa Wang
Jeanette Watson
Jonathan Williams

HONORS PROGRAM DARIN L. COLE AWARD.....LeVar Mizelle

GREEK HONORS CUP.....Delta Chi Chapter
Delta Sigma Theta Sorority, Inc.

ART DEPARTMENT

Academic Achievement Award ..... Chanteal Reynolds
Award of Merit ..... Cynthia Croswait

BIOLOGY DEPARTMENT

Clarence E. Biggs Award ..... Tarsha Darden
Herman Cooke Research Excellence Award ..... Steven Gilchrist
Harold Lawson, Jr., Shauna Steward
Curtis D. Turnage Award ..... Bettina Holloman
Certificate of Merit - Freshman ..... Carinthia Cherry
Certificate of Merit - Sophomore ..... Clarice Johnson

BUSINESS AND ECONOMICS DEPARTMENT

Wachovia Bank Scholarship ..... Lakisha Basnight, Terry Edwards
Wall Street Journal Academic Achievement Award ..... Afua Opuka
Graduating Senior Student-of-the-Year ..... Mark Foster
Junior Student-of-the-Year ..... Valerie McQuillen
Certificate of Achievement in Accounting ..... Julie Motta
Certificate of Achievement in Business Administration ..... Varick Taylor
National Business Education Association Award ..... Joyeria Johnson

DIVISION OF EDUCATION

Charles A. Bryant Scholarship ..... Juvanda Gibbs
Lois W. Green Graduating Senior Award in Teacher Education ..... Terri Parker
Outstanding Seniors in Psychology ..... Robin Duckett, Terri Mallonee
Donetta Privott, Andrea Temple
Outstanding Academic Achievement in Elementary Education ..... Penny Gurganus
Darci Jackson, Tracy Lane
Bobby Jo Owens, Monica Riddick, Blair Todd
Outstanding Senior in Special Education ..... Monica Rousseau
Outstanding Performance in Student Teaching ..... DiAnn Anderson
Jeanine Brouse, LaTaja Davis, Carol Dunn
Michael Hawkins, Donna McCloud
Miriam Mojarro-Quintero, Suzan Overton
Diane Ross, Stacy Smith, Tricia Tawes

EDUCATIONAL TALENT SEARCH PROGRAM

Academic Excellence Award ..... Andre Butts, Londrea Thomas
Exemplary Service Award ..... Susan Ciano, Juvanda Gibbs, Andrea Glasper
McNair Scholars Eagle Award ..... Sabrina Butts, Santiel Creekmore
Peter Eley, Courtney Fields, Tanya Granger, Alicia Jones
Kenya Madric, Charmaine Morgan, Veronica Overton
McNair Scholars Challenger Award ..... Sheri Joyner
McNair Scholars Excellence Without Excuse Award ..... Katrina Godwin
Bettina Holloman, Ayonda Moore

GENERAL STUDIES DIVISION

Division of General Studies Award ..... Cynthia Simpson

GEOSCIENCES DEPARTMENT

Department of Geosciences Academic Excellence Award ..... Thomas Hoskins
Cierra Walker, Jessica Yelverton

INCENTIVE SCHOLARSHIP PROGRAM

Outstanding Freshman Incentive Scholar ..... Allison Mims
Outstanding Sophomore Incentive Scholar ..... Clarice Johnson
Outstanding Junior Incentive Scholar ..... Bettina Holloman
Outstanding Senior Incentive Scholar ..... Tarsha Darden

LANGUAGE, LITERATURE & COMMUNICATION DEPARTMENT

Graduating Senior Award ..... Chenay Beamon
E. M. Spellman Award ..... Monique Boyce

MATHEMATICS & COMPUTER SCIENCE DEPARTMENT

The S. S. Sachdev Award ..... Jeaime Powell
Chaka Ruffin, Jonathan Williams
The J. L. Houston Mathematical Sciences Senior Award ..... Ayonda Moore
The Umfort E. Locus Sophomore Award in Computer Science ..... James Cooper
ONR-Nurturing ECSU Research Program Award ..... Bernard Bailey, Omar Gordon

Melvin Mattocks, Joseph Gale, Jeaime Powell
Alicia Jones, Kuchumbi Hayden, LaKisha Mundon
Office of Naval Research Scholars Award ..... Donald Charity, Katrina Godwin
Sheri Joyner, Santiel Creekmore
Courtney Fields
ONR-NERT Award of Excellence ..... Courtney Fields

MILITARY SCIENCE DEPARTMENT
Top Scholastic Average Award ..... Cadet Arnold Jones

MUSIC DEPARTMENT
Music Department Award ..... Brandon Egerton
Charles Penrose Award ..... Toni Wood
Edna Davis Theory Award ..... Benjamin Taylor
National Association of Music Merchants Award ..... Brandon Egerton

PHYSICAL EDUCATION AND HEALTH DEPARTMENT
Physical Education Academic Achievement Award ..... Heather Biggs, Colin Woodley

PHYSICAL SCIENCES DEPARTMENT
Rochelle Cleaners Excellence in Chemistry Award ..... Chashia Washington
Rochelle Cleaners Excellence in Physics Award ..... Santiel Creekmore
Physical Sciences Academic Excellence Award ..... Joseph Batts
Santiel Creekmore, Veronica Overton, Michael Pugh
Melitta Turley, Nadirah Shaw, James Turner, Chashia Washington

SOCIAL SCIENCES DEPARTMENT
Timothy H. Wamack Scholarship ..... Stephanie Faison
Criminal Justice Excellence Award ..... Sherry Bedsole, Kathleen Bowman
Sociology Excellence Award ..... Belinda Agee
Social Work Excellence Award ..... Amy Barcliff, Susan Heidler
Hope Jones, Janet Stone-Neilson, Stephanie Sutton
Social Work Highest GPA Award ..... Karen Arizmendi
Hope Jones
Social Work Achievement Award ..... Amy Barcliff, Juanita Bell
Latonya Cherry, Tre-Neice Hassell, Susan Heidler
Chastity Kinsey, Christie Long, Zaneta Taylor
Sheryl Stevens, Janet Stone-Neilson, Stephanie Sutton

STUDENT AFFAIRS DIVISION
Davis Cup ..... Complex Residence Hall
Accepting -Clarice Johnson, Jeanette Watson
Honda Campus All-Star Challenge Team ..... Sarah Foster, Gregory Lawson
Harold Lawson, Jr., Deanna Morring, Tinkia Ruffin
Henrietta B. Ridley Award for Excellence in Leadership ..... Afua Opoku

STUDENT SUPPORT SERVICES AWARD ..... Jawan Robinson

TECHNOLOGY DEPARTMENT
Industrial Technology Freshman Award ..... Bernard Bailey
Sophomore Achievement Award in Technology Education ..... Thomas Blevins
Sophomore Achievement Award in Industrial Technology ..... Joseph Tillett
Junior Achievement Award in Technology Education ..... Perry Mayer
Industrial Technology Faculty Award ..... George Copeland

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CLUBS AND ORGANIZATIONAL AWARDS

- The Alpha Kappa Alpha Sorority Scholarship
  Delta Theta Chapter ..... Peter Eley
- The Alpha Kappa Alpha Sorority Scholarship
  Zeta Kappa Omega Chapter ..... Michelle Lewis
- The Delta Sigma Theta Sorority Scholarship
  Elizabeth City Alumnae Chapter ..... Vernecia Townes
- Kappa Delta Pi - Outstanding Scholar's Award ..... Stacy Smith
- Phi Beta Sigma Fraternity Award
  Gamma Rho Chapter ..... Dedric Reid
- Sigma Tau Delta Achievement Award ..... Ralisha Mercer, Ronda Dorsey, Michelle Lewis, William Nelson, Jr.

WHO'S WHO

Karen Arizmendi
Chenay Beamon
Sherry Bedsole
Juanita Bell
Kathleen Bowman
Monique Boyce
Ruth Burgess
Latonya Cherry
Peter Eley
Katrina Godwin
Dana Golden
Tanya Granger
Rachael Haines
Bettina Holloman
Connie Jones
Hope Jones
Chastity Kinsey
Michael Lewis
Chianti Lloyd
Christie Long
Ralisha Mercer
LeVar Mizelle
Ayonda Moore
Mashawnda Razor
Dedric Reid
Chanteal Reynolds
Marcus Riddick
Tinkia Ruffin
Rebecca Silva
Zaneta Taylor
Blair Todd
Vernecia Townes
Kizzy Ward
Latoya Williams

Chancellor's Distinguished Emblem Award
Spring Semester 1997-98

Travis J. Albritton
Sandra Temple Boyd
Samantha Latara Brown
Rebekah Ann Collins
Tammie Shirele Currie
Corey McCarron Ellis
Natalie Janeen Hall
Tamara Lynette Hedgebeth
Rachel Ann Holmes
Adreanne Marnique Joyner
Demetrium Doyle Melton
Tyrell L. Moore
Tonisha Hinton Mozelle
Terrica D. Nelson
Jennifer Green Nooney
Natasha Deanna Peters
Shonda Patrice Pittman
Brandi Richardson
Francis Shadreck Sakala
Fred Stacy Sessoms
Daniel Lee Smith
Josephina Arnetta Spruill
Angel P. Swimme
Reshamah Dawn Taylor
Taneka Shimone Taylor
Jamaal Turner
Tandeka Lanell Whitaker
Delicia Antionette Wright
Tajima S. Johnson
Tynoshia D. Barnes
Chenay Beamon
Juanita Arlene Bell
Heather Lyn Biggs
Tarsha Joy Darden
Scott Lee Forbes
Steven Lee Gilchrist
Nykeeya Reneé Hatten
Cherelle Keena Jenkins
Harold Vincent Lawson
Julie Ann Motta
Bonita Jeanne Robinson
Summer Lynn Smith
Nekia Dionne Walker
Alfreda R. Williams
Mark Migue Mwaura
George Thomas Branch
Rodshawn Lamont Branch
Stephanie Fenner
Katrina Yvette Godwin
Bettina Shaunee Holloman
Stephanie Guttu Kelly
Tamisha Sha'Ron Murphy
Susan Ellen Roberts
Colin Reid Woodley
Alan Brooks Alexander
Kristine Ann Arnold
Stacy Brock
Karl Bass Chappell
Charles Ronald Craddock
Joshua Frederick Henson
Clarice Ruth Johnson
Benjamin L. Long
Cierra Disireé Walker
Jeanette Watson
Linda Ann Bond
James S. Cooper
Royelle Edwarda Davis
Carrie L. Finney
Theodore Paul Finney
Allison E. Hughes
Wendilyn Price Pierce

Chancellor's Distinguished Emblem Award
Fall Semester 1998-99

Rocky L. Allen
Connie Lane Ashley
Tynoshia D. Barnes
Joseph Boyd Batts
Benjamin Earl Baum
Chenay Beamon
Heather Lyn Biggs
Theo N. Bohn
Crystal R. Bond
Sheanna L. Bonner
Monique LeShawn Boyce
Floyd Godwin Bracy
Rodshawn Lamont Branch
Karen Lee Briggs
Tammy Brinkley
Tinika Lyvette Bunch
Beth Ann Carpenter
Carinthia Amanda Cherry
Trenette Tyrell Clark
Santiel Creekmore
Tarsha Joy Darden
Uyless M. Dewberry, Jr.
Gwenette Nicole Dixon
Brandon Antonio Egerton
Larry C. Elmore
Steven Lee Gilchrist
Katrina Yvette Godwin
Rachael Marie Haines
Joshua Frederick Henson
Nicole M. Hoffler
Bettina Shaunee Holloman
Hope F. Jennings
Clarice Ruth Johnson
Sheri D. Joyner
Zelda E. King
Waquita Nicole Lane
Harold Vincent Lawson
Menervia Lizetta Mangum
Ralisha M. Mercer
Gina R. Miller
Adriane Danielle Patterson
Victesha Roshane Pettaway
Kendra Shanae Powell
Mashawnda E. Razor
Chanteal Reynolds
Megan Elizabeth Seymour
Kacey Lynn Smith
Kendra Celia Smith
Summer Lynn Smith
Risha Elizabeth Stallings
Kristin Elaine Suchy
Tracy A. Taylor
Teresa Rebecca Tillery
Vernecia Von Townes
Melitta Hodge Turley
Nekia Dionne Walker
Jeanette Watson
Tasha Lynette Williams

Honors Spring Semester 1997-98

Chancellor's List: 3.75 to 4.0 Average

Travis J. Albritton
Alan Brooks Alexander
Karen Pearce Arizmendi
Kristine Ann Arnold
Kim B. Ballance
Roma Marie Barcliff
Tynoshia D. Barnes
Tammi Bass
Chenay Beamon
Cindy C. Beamon
Sherry Loraine Bedsole
Juanita Ariene Bell
Angela Reversal Betts
Heather Lyn Biggs
Linda Ann Bond
Kathleen Bowman
Sandra Temple Boyd
George Thomas Branch
Rodshawn Lamont Branch
Lynn Reneé Braymiller
Stacy Brock
Tonya L. Brothers
Samantha Latara Brown
Christine Suzanne Buell
Ruth Ann Burgess
Bobby Burrus
Tanya C. Chalk
Karl Bass Chappell
Annette E. Cherry

Rebakah Ann Collins
Jane E. Cook
James S. Cooper
Charles Ronald Craddock
Cynthia Askew Croswait
Louise Irene Croswait
Pamela D. Crowell
Tammie Shirele Currie
Tarsha Joy Darden
Richard Scott Darling
Cynthia R. Dashiell
Royelle Edwarda Davis
Ronda Lynn Dorsey
Lutashia J. Dove
Jonthan R. Downing
Carol Johnson Dunn
Walter P. Dunn
Debra Lea Eason
Corey McCarron Ellis
William Thomas Fehlberg, Jr.
Stephanie Fenner
Janet Rose Ferrell
Carrie L. Finney
Theodore Paul Finney
Scott Lee Forbes
Amy Ruffin Forbis
Carl Bradley Foster, Jr.
Michael D. Fournier
Reneé White Foy

Clarrissa Eliabeth Freshwater
Mary E. Faust Friedman
Lisa A. Gallelli
Christa L. Gallop
Melinda F. Gates
Steven Lee Gilchrist
Katrina Yvette Godwin
Dana Blowe Golden
Mary C. Griffin
Natalie Janeen Hall
Charisse M. Harney
Melissa Morlock Harnly
Rachel Harrison
Nykeeya Reneé Hatten
Christie P. Hawkins
Michael Wayne Hawkins
Tamara Lynette Hedgebeth
Joshua Frederick Hanson
Susan C. Hoggard
Bettina Shaunee Holloman
Rachel Ann Holmes
Patricia Farrell Huff
Christina Ewell Hutchinson
Norma Frazier Jeffocat
Cherelee Keena Jenkins
Angela Marie Jennings
Clarice Ruth Johnson
Tajima S. Johnson
Meri Lisa Jolin

Brian Anthony Jones
Buinton L. Jordan, Sr.
Adreanne Marnique Joyner
Sheryl Ann Keagy
Stephanie Guttu Kelly
Karen Forbes Kidd
Rebecca U. Kirkbride
Harold Vincent Lawson
William Moses Ledford
Troy L. Lewter
Forrest Wayne Liverman
Benjamin L. Long
Crystal Diane Macon
Rebecca A. Maestas
Kevin R. Markham
Samantha Marshall
Christi T. Martin
James C. Martin
Donna Kay McCloud
Amy M. McDaniels
Jean D. McLean
Shaunell Lavon McMillan
Demetrium Doyle Melton
Tammy Miller-White
Allison Hughes Mims
Michael P. Moore
Tyrell L. Moore
Adam Morner Morgan
Julie Ann Motts

Tonisha Hinton Mozelle
Tamisha Sháron Murphy
Mark Migue Mwaura
Terrica D. Nelson
Jennifer Green Nooney
Natasha Deanna Peters
Wendilyn Price Pierce
Shonda Patrice Pittman
Traci Lynn Pritchard
Jennifer Slayton Pugh
Michael D. Pugh
Claudio Riccardo Ragazzi
Brandi Richardson
Susan Ellen Roberts
Bonita Jeanne Robinson
Diane Karen Ross
Tinkia T. Ruffin
Christine H. Russell
James M. Russell, Jr.
Francis Shadreck Sakala
Carol Fighmaster Saunders
Shirley Mae Schoolfield
Cliff Richard Schweitzer
Fred Stacy Sessoms
Daniel Lee Smith
Debra Gregory Smith
Summer Lynn Smith
Brian Parker Snow
Josephina Arnetta Spruill

Tonia A. Apruill
Linda Rae Sutton
Angel F. Swimme
Amy Williams Taylor
Reshamah Dawn Taylor
Taneka Shimone Taylor
Brian Scott Thompson
Dawn Woodroof Tillett
Sunday Kirk Tinnell
Blair B. Todd
Sarah Jean Lebow Tolson
Chrystal H. Towe
Jamaal Turner
Clerra Disireé Walker
Nekia Dionne Walker
Theresa Lynn Walter
Jeanette Watson
Diane Copley Whedbee
Tandeka Lanell Whitaker
Roxanna Elizabeth White
Rhonda S. Wiggins
Alfreda R. Williams
Pam Muse Williams
Pamela P. Williams
Colin Reid Woodley
Delicia Antionette Wright

Vice-Chancellor's List: 3.50 to 3.74 Average

Floyd Chris Adams
Jennie Adams
Belinda Ann Agee
Rayshawn Lamar Askew
Vivian Alberta Baars
Amy Aileen Barclift
Joseph Boyd Batts
Charles Lindbergh Berry
Annika Neshele Billups
Crystal Del'Borah Bloomfield
Crystal R. Bond
Khesa P. Bond
Latonya M. Bond
Sheanna L. Bonner
Jeremy Boone
Latausha Muchinson Boone
Phillip Keith Bowen, Jr.
Dequetta Renee Boyd
Patricia P. Brewer
Karen Lee Briggs
Sha'kesha La'shon Brown
Richard S. Bullock

Joni Lynn Bundy
Kathryn Dail Burgess
Tyrell Carr
Karen Melissa Carver
Darlene Chatman
Latonya L. Cherry
Latrisha Chantel Cherry
Robbins Lorain Cherry
Trenette Tyrell Clark
Gaston L. Collings, Jr.
Pamela T. Collins
Sharon D. Cooper
George Donald Copeland
Terry Michael Darrow
Nikia Tasheema Davenport
Annette Marie Dixon
Jeremy Raymond Drake
Mary Catherine Dyer
Rose Helen Easkins
James R. Eaton
Phebe Antoinette Eley
James E. Everett

Sandy Rae Farrow
Arthur Lee Fenner
Michael A. Flanigan
Andrea Shawndazle Glasper
Joyce Ann Godwin
Anthony M. Gray
Penny Lynne Gurganus
Bethaney Linn Hague
Rachael Marie Haines
Edward Hall, Jr.
Larquetta D. Hammie
Keisha L. Harris
Julie K. Hudson
Roger Allen Irby
Nataniel D'Urville Isaac
Venita Francine Jenkins
Shanika Nicole Johnson
Charles R. Jolley, Jr.
Connie Leigh Jones
Hope Yvette Jones
Lisa Whitehurst Jones
Maris Darlene Jones

Thaddeus Sinclair Jones
Milika Latrel King
Lemuel A. Lamb, III
Norma G. Lawson
Stacey Layden
Monica Sharpe Leary
Chianti M. Lloyd
Eric Lamont Lyons
James G. MaJette
Perry M. Mayer
Kenneth Allen Mays
Kristi Dawn McNair
Montreal Treon McNair
Valerie Renea McGuillen
Ralisha M. Mercer
Ayonda Deshonne Moore
Michael Dempsey Morris
Rebe Latorie Mosley
Pantina Shamone Murrell
Tiffany Moncell Newell
Linda Worrell Parker
Loretta Joy Parsons

Adriane Danielle Patterson
Judy E. Peirson
Brian K. Phelps
Kenya J. Pleasant
Jealme Henri Powell
Cynthia Marie Pritchard
Donetta Renea Privott
Robert Wesley Privott
Billie D. Purnsley
Mashawnda E. Razor
Alisha Maxine Reid
India Sadie Rhodes
Donia Dee Riddick
Peter John Rodrigues
Polly Jain Rollinson
Paula Irene Rose
Charice Ardele Rosser
Felicia A. Saunders
Karen Cornellia Saunders
Bridgett LaShawn Silver
Cindy Nicole Smith
Kristen Lyn Smith

Zaneta Cowell Spellman
Elbretia Martha Spencer
Mary Lane Spivey
Amanda Kay Stallings
Toneika S. Stephens
Glenn Leon Stiles, Jr.
Janet M. Stone-Neilsen
Stephanie Lynn Sutton
Tavon Leshelie Tate
Tracy A. Taylor
Andrea Carol Temple
Vernecia Von Townes
Jarrod William Turner
Kelvin M. walston
Jennifer Wilkins
Anto Williams
Laverne Sedell Williams
Mamie B. Williams
Sherica T. Williams
Tasha Lynette Williams
Toni Lee Wood

Honor List: 3.00 to 3.49 Average

Joyce Lashun Allen
Rocky L. Allen
Derrick G. Alston
Patrick Israel Anding
Cynthia Michelle Arendts
Battina Doreen Armstrong
William Larry Askew
Melind Joyce Ayers
Nikole Reneé Baker
Kenya Tamea Barker
Keenon Durrell Walker Barnard
Shaunte Laquita Barnes
Colina N. Bartlett
Lakisha Shawnette Basnight
Benjamin Earl Baum
Jennifer M. Beatley
Connie Dolores Bell
Iresa Wonchez Bell
Ja'net Latoya Bell
Myra Sieglinda Blow
James Carlton Blowe
Heath Vinson Boan
Onzaria Marce Bobbitt
Milton Thomas Bond
Angie D. Booker
Arlene Twine Boston
Susan Jane Bourassa
Tameca Michelle Bowe
Lyndon Forbes Bowen
Quinterlene Cherry Bowen
Shanta Danielle Bowman
Monique LeShawn Boyce
Ryan Waynn
Joshua S. Boyd
Ronei Lee Brewer
Kevin Lee Briggs
Yetta Marie Brimage
Curtis Eugene Brooks, jr.
Janine Robin Brouse
Randy Brown
Tonia Darselle Brown
Clinton Bryant
Armecia Renee Buck
Kimberly Renee Bunch
Tahwana M. Burks
Dlinda Berovia Burley
Angela Burrus
Derrek W. Burrus
Ann Janette Cahoon
Jameka Linette Cameron
Genia M. Canada
Jermaine Jacob Carter
Anthony Tyrone Chambers
Donald Dwight Charity, Jr.
Keneeka B. Chavis
Tanesha Michelle Cherry

Irene A. Claiborne
Tomika La'Verne clark
Curtiss L.Coffield
Charna A. Cooper
Crystal Joye Cooper
Lucy Boadda Cooper
Stephanie Elizabeth Cooper
Lynell Patrese Coston
Tawanda Latris Coston
Tyrell William Coston
Tanisha Shenae Cowell
Christopher M. Crawford
Brian Davis Crump
Ronald Thomas Cullipher, Jr.
Naomi Curtis
Christy Dawn Davenport
Rebecca Ann David
Mark Allen Delosreyes
Jason Craig Denham
Nicole Newbern Derby
Uyless M. Dewberry, Jr.
Gwenette Nicole Dixon
Carledia V. Dozier
Cornelius Jermain Drake
Felicia Nicole Drew
Robin Jeycea Duckett
Shenay Marvetta Dunston
Christopher Kodi Edmonds
Brandon Antonio Egerton
Jo Ann Eller
Re'Ne L. Eller
Larry C. Elmore
Milika Lenay Epps
Wilton Jondale Evans
Rebecca Elaine Eves
Stephanie Y. Faison
Spencer Lamonte Faulkner
Amy Ferebee
Alfred Ray Ferguson
Courtney DeAnn Fields
Karla Jo Ford
Leroy R. Fowler, III
Elouise Francis
James D. Gatling
Christopher Gladney
Dennis Lee Gordon
Maricia R. Granby
Benjamin C. Gray, Jr.
Thurman Brian Gray
Fitema Arnea Gregory
Givita T. Hyman Griffin
Kimberly Lorraine Gruver
Patty Twiford Halstead
Anthony Demone' Harding
Candace Eyvonne Hardnett
Alvery D. Hargrove

Shiree Wharton Harley
Tami Stanberry Harper
Evelyn Thornton Harris
Teneshia Danielle Harris
Tonya Hughes Harris
Keisha Lashaun Harrison
Andrea Shantae Harvey
Lakeisha N. Harvey
Treneice C. Hassell
Rodney J. Wawkins
Bobbie Jean Hayman
Nikki Syreeta Heyward
Lekesha Hill
Barbar Divene Hines
Kimberly Tolanda Hines
Tamika Nicole Hinton
Torrey N. Hinton
Nicole M. Hoffler
Abdual Hasson Hoggard
Tinitra J. Holley
Tyneka Segal Holley
Guinton L. Holmes
David Jermaine Howell
Jade J. Hughes
Donté Norman Humphrey
Joel Avery Hunter
Suzanne Crystal Jacobs
Chelsea James
Marcia Sutton James
Rhonn Malique James
Hope F. Jennings
Janet Lynn Jernigan
Alicia Michelle Jones
Arnold L. Jones
Kevin Mosea Jones
Nina M. Jones
Susan Marie Jones
Tameka A. Jones
Yvette M. Jones
Daniel L. Jordan
Neil Andrew Jordan
Sheri D. Joyner
Rodridgeouz Lashawn Kee
Malinda Lavette Keyes
William Arnold Kight
Lecia King
Chastity J. Kinssey
Charles Anthony Lamb
Loretta Mae Lane
Waquita Nicole Lane
Kimberly Anneice Lawrence
Beaulah La'Shane Lee
Jobina Alexandra Lee
Rachel Leone
Michelle Estelle Lewis
Sharard Rufus Lindsey

Dennis Eugene Linney
Isaac Lee Lister, Jr.
Monica Dense Littlejohn
Von Littlejohn
Kevin James Lloyd
Kelsey L. Lodge
Bersada Slaine London-White
Christie N. Long
Tonya F. Lyons
Kenneth Earl Madine
Terri Lynn Mallonee
Johnell Malone
Keith Donnell Manson
Keshawn Adell McCleod
Paulette McCoy
Cathy G. McDaniels
Kisha Aleandra melton
Alyca M. Miller
Gordon Holt Miller
Kenneth Miller
Amy Lynn Mizell
Levar Dominick Mizelle
Pamela Wilson Modlin
Miriam Mojarro-Guintero
Andrea D. Moore
Nitika L. Murphy
William Baker Nelson, jr.
Melissa Newby
Chad Charles Nicoll
Natarsha Vonshel Nixon
Cynthia Norman
Jennetta Norman
Samuel D. Norman
Letisha Nowell
Ginger H. O'Neal
Thanh Van On
Afua Opokua Opoku
Jammie Lavern Outlaw
Nicole Forehand Overton
Bobby Jo Owens
Tori Shanise Padgett
Kendra Lynette Parker
Sakina Lashay Parker
Sterling David Parker
Tashnia Gwenice Parker
Amy Parks
Jaime S. Peeler
William Whitman Peeler, III
Tonya Reneé Peterson
Victesha Roshane Pettaway
Courtney Natasha Phillips
Teri Simpson Phthisic
Stacey Colson Pierce
James Carlton Polk, II
Tracy Benton Port
Alsha Latoya Powell

Brenda Denise Powell
Cindy L. Powell
Eric Wayne Powell
Kendra Shanae Powell
Latasha R. Powell
Marisa D. Powell
Jami Lee Powers
LaDonna S. Price
Regina Glenita Price
Derek C. Purcell
Cynthia Leigh Reed
Dedric S. Reid
Tiffney R. Reid
Adrian Richardson
Marcus Westley Riddick
Ronald A. Riddick, Jr.
Selma Riddick
Jimmie Delane Ritter, Jr.
Donna Elise Rivers
Katina Lavern Roberts
Tremaine Lewanna Roberts
Sabrina Kimberly Robinson
Sharon M. Rogan
John Leewood Rook
Termaine T. Ross
Letitia Rena Roulhac
Samantha D. Royster
Omari Walden Salisbury
Pete Edward Salitore
Talarisha Shenay Saunders
Kimberly Lynette Sawyer
Shericka N. Sawyer
Videl André Sawyer
Melinda Harrell Scaff
Stephanie L. Scales
Garrick Devon Scott
Braddock D. Sessoms
Monica Denise Sessoms
Kimberly M. Seymore
Brenda Ashley Seymour
Megan Elizabeth Seymour
Dorene Sharpe
Madirah Lotise Shaw
Rebecca E. Silvar
Christian Noel Skinner
Darlene Melle Skinner
Zorri LeTroy Skinner
Amity N. Sledge
Marcel L. Sledge
Nikita Shawne SMall
Raiston T. Spellman, Jr.
Spanishia Dorothy Spragley
Sheryl D. Stevens
Lisa Webster Stevenson
Shauna Jaquay Steward
Donna Thornton Stiles

Jaime June Stone
Any Christina Strong
Stephanie Michelle Sutton
Carlos Pierre Talavera
Angela Bryant Taylor
Joan Harrell Taylor
Ryan E. Taylor
Varick Theron Taylor
Herbert Michael Thibodeauk
Kenyatta Michelle Thomas
Tekeyla S. Thomas
Avis Michele Thompson
Terrance William Thornton
Tashia Esta Tillett
Julia R. Towns
Melitta Hodge Turley
Joanne Tuten
Natalie N. VanHorn
Albert Roscoe Walker, III
Lakeisha Yvette Walker
Sherry Anita Walker
Rebecca Lee Walston
Gary Lamont Walton
Lisa Chiao-Ling Wang
Kizzy Dimanda Ward
Kristopher Lamont Ward
Lynda J. Ward
Tammara M. Ward
Kimberly Louanda Ware
Chashia Reneé Washington
Raymond Lamar Weaver
Treva Dukes Weavewr
Tamkia L. Wesson
Cynthia L. Wheeler
Andre J. Whidbee
Frederick Bertic White
Selma Marie White
Tany Patrice White
Clifford C. Whitehurst
Derrick Tyrone Wilkes
Kelsey Kendale Wilkins
Aretha Chanté Williams
Christina G. Williams
Jonathan Shelton Williams
Latoya E. Williams
Nikeiette Williams
Larry Wilson, Jr.
Toya Leeneta Wilson
Jay Garrett Winslow
Justin Ray Winslow
Lancelort D. Winslow
Derek Daniel Witcher
Bertis Tyrone Woolard
Susan Hodge Worley
Jerri Renita Zachary

Honors Fall Semester 1998-99

Chancellor's List: 3.75 to 4.0 Average

Pamela Gae Adams
Belinda Ann Agee
Leigh-Anne Jean Allen
Rocky L. Allen
Karen Pearce Arizmendi
Beth V. Ashley
Connie Lane Ashley
Connie Pendleton Balduf
Kim B. Ballance
Tynoshia D. Barnes
Joseph Boyd Batts
Benjamin Earl Baum
Yong Hui Beck
Angela Reversal Betts
Heather Lyn Biggs
Carroll Biondi
Pamela A. Bodley
Theo N. Bohn
Crystal R. Bond
Sheanna L. Bonner
Andrew Kiddoo Bowman
Monique LeShawn Boyce
Floyd Godwin Bracy
Rodshawn Lamont Branch
Teresa Galtress Bray
Patricia P. Brewer
Karen Lee Briggs
Tammy Brinkley
Carly Morgan Brothers
Janine Robin Brouse
Tinika Lyvette Bunch
Kathryn Dail Burgess
Ruth Ann Burgess
Adam M. Canales
Beth Anne Carpenter
Annette E. Cherry
Carinthia Amanda Cherry
Nannette Eileen Cherry
Cynthia Michele Christian
Trenette Tyrell Clark
Jane E. Cook
James S. Cooper
Abby Rebecca Corprew
Santiel Creekmore
Michelle Marie Cullipher
Cynthia R. Dashiell
Kathleen Delaney Davis
Uyless M. Dewberry, Jr.
Gwenette Nicole Dixon
Ronda Lynn Dorsey
Carol Johnson Dunn
Debra Lea Eason
Brando Antoio Egerton
Larry C. Elmore
William Thomas Fehlberg
Carrie L. Finney
Sarah Burgin
Michael D. Fournier
Renee White Foy
James C. Gibbons
Katrina Yvette Godwin
Dana Blowe Golden
Rachael Silverwood Haines
Charisse M. Harney
Melissa Morlock Harnly
Michael Wayne Hawkins
Susann H. Heidler
Joshua Frederick Henson
Barbara Divene Hines
Susan C. Hoggard
Bettina Shaunee Holloman
Benita Earl Hurley
Roger Allen Irby
Eldon E. Jackson
Hope F. Jennings
Clarice Ruth Johnson
Connie Leigh Jones
Quinton L. Jordan, Sr.
Sheri D. Joyner
Ravinder P. Kaur
Karen Forbes Kidd
Zelda E. King
William E. Krimmel, III
Barbara K. Lamb
Tracy Anne Lane
Waquita Nicole Lane
William Moses Ledford
Rebecca Lynn Leonard
Dennis Eugene Linney
Susan Lynn Lowe
Menervia Lizetta Mangum
Samantha Marshall
Perry M. Mayer
Shaunell Lavon McMillan
Tara K. Meads
Samantha Jean Meler
Ralisha M. Mercer
Gina R. Miller
Allison Hughes Mims
Marlo Oweita Moore
William Baker Nelson, Jr.
Suzan Wescott Overman
Loretta Joy POarsons
Adriane Danielle Patterson
Victesha Roshane Pettaway
Stacey Colson Pierce
Wendilyn Price Pierce
Kendra Shanae Powell
Carol A. Pressnell
Michael D. Pugh
Mashawnda E. Razor
Cynthia Leigh Reed
Chanteal Reynolds
Kimberlie Lynne Riddick
Michael Tremain Roberson
Diane Karen Ross
Monica Howell Rousseau
Christine H. Russell
Videl André Sawyer
Shirely Mae Schoolfied
Megan Elizabeth Seymour
Travis Brandon Shepard
Sachwinder P. Singh
Debra Gregory Smith
Kacey Lynn Smith
Kendra Celia Smith
Summer Lynn Smith
Risha Elizabeth Stallings
Sheryl D. Stevens
Roxanne P. Stewart
Janet M. Stone-Neilsen
Kristin Elaine Suchy
April A. Tarkenton
Robin Lane Taylor
Tracy A. Taylor
Rebecca Renee Thompsor
Teresa Rebecca Tillery
Dawn Woodroof
Vernecia Von Townes
Melitta Hodge Turley
James P. Turner
Paulette Myers Wagner
Melissa Anne Walker
Nekia Dionne Walker
Tyrone Ward
Jeanette Watson
Cynthia Sue Watts
Melissa Marie White
Lena A. Whitefield
Julie Davis Williams
Tasha Lynette Williams

Vice-Chancellor's List: 3.50 to 3.74 Average

Veronica Arango
Cynthia Michelle Arendts
Melinda Joyce Ayers
Vivian Alberta Baars
Tonya M. Banks
Amy Aileen Barclift
Shelly Marie Barrack
Kimberly Dawn Baum
Jennifer M. Beatley
Sherry Loraine Bedsole
Juanita Arlene Bell
Charles Lindbergh Berry
Thomas Lewis Blevins
Latonya M. Bond
Lucy Ann McMurrin Bowe
Phillip Keith Bowen, Jr.
Kathleen Bowman
Kimberly Alison Bray
Kevin Lee Briggs
Nancy V. Brinkley
Teresa K. Brinkley
Stacy Brock
Clinton Bryant
Armecia Renee Buck
Richard S. Bullock
Kimberly Renee Bunch
Olinka Berovia Burley
Sabrina Butts
Stephanie Ann Carpenter
Jermaine Jacob Carter
Karl Bass Chappell
Darlene Chatman
Gamaliel R. Cherry
Latonya L. Cherry
Monica Yvette Chesson
Karin Deniece Davis
Mary Catherine Dyer
Arthur Lee Fenner
Alfred Ray Ferguson
Keisha Yvonne Ferguson
Courtney DeAnn Fields
Carl Bradley Foster, Jr.
Gregory Jason Gilbert
Bethaney Linn Hague
Holly Renee Harris
Nykeeya Reneé Hatten
Torrey N. Hinton
Kristal Jade Holley
Sherri Genese Horner
Karen Johnson
Vickie Y. Johnson
Charles R. Jolley, Jr.
Arnold L. Jones
Lisa Whitehurst Jones
Stacey Paulette Jones
Susan Marie Jones
Tiffany Lynne Jones
Stephanie Guttu Kelly
Tiffanie Elizabeth King
Timothy Langaster, Jr.
Demetra Jacobs Lassiter
Tamara Tamika Little
Christie N. Long
Christopher Anthony Lopez
Tiffany L. Lumsden
Melvin Lee Mattocks
Ingrid McEntire
Valerie Renea McQuillen
Kisha Aleandra Melton
Sherre Lone Midgette
Tonya R. Mitchell
Amy Lynn Mizell
Miriam Mojarro-Quintero
Shirley Montague
Julie Ann Motta
Tamisha Sha'Rone Murphy
Pantina Shamone Murrell
Damond Lamar Nollan
Bobby Jo Owens
Pamela Anne Parnell
David Jason Perdue
Aisha Latoya Powell
Rona Eileen Reynolds
Machenzie G. Richardson
Monica Razor Riddick
Susan Ellen Roberts
Jawan Monique Robinson
Peter John Rodrigues
Samantha D. Royster
Pernell Lamont Savage
Sharonne Tramaine Sawyer
Kimberly M. Seymore
Brenda Ashley Seymour
Cynthia Ann Simpson
Verita Kaye Smaw
Cindy Nicole Smith
Leeka Catherine Sock
Amanda Kay Stallings
Quinta Shermeka Staton
Amy Christina Strong
Stephanie Lynn Sutton
Stephanie Michelle Sutton
Sheva Vendetta Tate
Benjamin Maurice Taylor
Andrea Carol Temple
Myron G. Terry
Anthony Eugene Thatch
Brian Scott Thompson
Sherry Anita Walker
Kimberly Louanda Ware
August Virginia Whidbee
Roxanne Elizabeth White
Anton Williams
Dawn Nichole Williams
Toni Lee Wood
Colin Reid Woodley
Vontina Sherri Woodley
Keenan A. Wynn
Jessica Cieo Yelverton

Honor List: 3.00 to 3.49 Average

Nakina Latrelle Alexander
Joyce Lashun Allen
Derrick Q. Alston
Lendick Bronzell Andrews
Rayshawn Lamar Askew
Bernard Wesley Bailey, Jr.
Tera Shawnae Banks
Keenon Durrell Barnard
Shana L. Barnes
Shaunte Alaquita Barnes
William Neal Barnes
Colina N. Bartlett
Emanuel Leroy Basnight, Jr.
Lakisha Shawnette Basnight
Kesha D. Bennett
Joslin M. Bentley
Annika Neshele Billups
Crystal Del'Borah Bloomfield
Milton Thomas Bond
Melvin Jevon Bonner
Jeremy Boone
Latausha Muchison Boone
Bonita Dephne Booze
Susan Jane Bourassa
Shanta Danielle Bowman
Eleanor Boyce
Tina Renee Boyce
Joshua S. Boyd
Ronel Lee Brewer
Brarick L. Bridgers
Detuissse Michole Broady
Flora May Brooks
Tracy M. Brooks, Jr.
Anthony Shane Brown
Tonia Darselle Brown
William Farrell Brown, Jr.
Mark Anthony Bumper
Justin J. Burk
Jameka Linette Cameron
Genia M. Canada
Tyrell Carr
Abrian Cherwanda Carter
Kimberly Michelle Carter
Karen Melissa Carver
Shari Lynn Cassese
Darian Chamblee
William Harvey Chappell
Donald Dwight Charity, Jr.
Amanda Reneé Chastain
James Anthony Cheatham
Catreina Dinnete Cherry
Latrisha Chantel Cherry
Roy Carlton Cherry, Jr.
Susan Villasur Ciano
Donald Ray Clark
Latoya Patrice Clark
Nellie Marie Clark
Amy Marie Colanero
Alva R. Cooper
Charna A. Cooper
Stephanie Elizabeth Cooper
Michele Diane Cox
Kizzy Victoria Crawford
Eric A. Crump
Denita Cherell Dalton
Lorita A. Dance
Stephen H. Davenport
Rebecca Ann David
Lataja Davis
Mark Allen Delosreyes
Nicole Newbern Derby
Annette Marie Dixon
Sharlena Downing
Tanisha Delaine Draughn
Felicia Nicole Drew
Robin Jeycea Duckett
Marcus Tawuan Dunston
Terry McCoy Edwards
Phebe Antoinette Eley
Shamelya England
Milika Lenay Epps
Dixie Blanche Estus
Vanisha Z. Etheridge
Lakitra Shanae Evans
James E. Everett, III
Stephanie Y. Faison
Spencer Lamonte Faulkner
Antionette Lee Felder
Stephanie Fenner
Michael A. Flanigan
Paula L. Forehand
Craig P. Foster
Leroy R. Fowler, III
Joseph Andrew Gale
Christa L. Gallop
Nathan Marice Garner
James D. Gatling
Juvanda Lennett Gibbs
Nancy Harrell Godfrey
Omar Ulysses Gordon
Tanya Sherrell Granger
Anthony M. Gray
Nicole Marie Gray
Fitema Arnea Gregory
Penny Lynne Gurganus
Edward Hall, Jr.
Melissa Hall-White
Patty Twiford Halstead
Anthony Demoné Harding
Bessie Loretta Hardy
Chrystal Acceber Hargett
Reginald Eugene Harrell
Wynet Vernesia Harrell
Keisha L. Harris
Tama Harris
Teneshia Danielle Harris
Keisha Lashaun Harrison
Treneice C. Hassell
Victoria Rose Hassell
Christie P. Hawkings
Schquetta Lanay Hawkins
Kuchumbi Linwood Hyaden
Bobbie Jean Hayman
Sonja Cherese Hendricks
Barbara Grace Hendrix
Van-Dee Hetherington
Tinitra J. Holley
Tyneka Segal Holley
Carrie F. Houseknecht
Leonard Eugene Hux
Darci Diane Jackson
Markisha Jackson
Richard William Jackson
James A. Jacobs
Chelsea James
Marcia Sutton James
Sholonda Tawana James
Cherelle Keena Jenkins
Joya Naticia Jenkins
Venita Francine Jenkins
Kelly Kamay Johnson
Monica Latoya Johnson
Travious LaQuanda Johnson
Vickie Marie Johnson
Harvey Reginal Jones, Jr.
Hope Yvette Jones
JoAnna Brooks Jones
Nina M. Jones
Crystal L. Jordan
Rodridgeouz Lashawn Kee
Lecia King
Chastity J. Kinsey
Joseph Kurtzweit
Alesha Dwan Lane
Tonica Lashon Lanier
Jobina Alexandra Lee
John Richard Livingston
Chianti M. Lloyd
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Kelsey L. Lodge
Benjamin L. Long
Tonya F. Lyons
Kenya T. Madric
Rebecca A. Maestas
Terri Lynn Mallonee
Laura Patricia Marquette
Altovise T. Martin
Kenneth Allen Mays
Donise Lechelle McCune
Cathy G. McDaniels
Latasha McNair
Kimberly D. McPherson
Holly Barkwell Meads
Sharon Cooper Meads
Abigail Catherine Michalak
Corey Daniel Miller
Gordon Holt Miller
Tammy Miller-White
Bjorn Althea Mills
Levar Dominick Mizelle
Shayvonne Mizelle
Andrea D. Moore
Craig Brandon Moore
Elton K. Moore
Charmaine D. Morgan
Cynthia Marie Morris
Michael Dempsey Morris
Rebe Latorie Mosley
Tonisha Hinton Mozelle
Alicia M. Myrick
Barron Neal
Latashia Newsome
Jennetta Norman
Letisha Nowell
Anna Wairimu O'Brien
Afua Opokua Opoku
Jammie Lavern Outlaw
Veronica Regina Overton
Tori Shanise Padgett
Inger Leverdia parker
Janell Tyrice Parker
Kendra Lynette Parker
Khalil Dequan
Linda Worrell Parker
Sakina Lashay Parker
Wendelin Ronette Parker
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Marisa D. Powell
Donetta Renea Privott
Clarissa Juanette Purvis
Robbie D. Ramsey
Latonya Michelle Raynor
Becky Bruebaker Reeder
Dedric S. Reid
Marcus Westley Riddick
Ronald A. Riddick, Jr.
Donna Elise Rivers
Tremaine Lewanna Roberts
Bonia Jeanee Robinson
Sabrina Kimberly Robinson
John Leewood Rook
Patricia Ann Roscoe
Jacquetta M. Rosemond
Termaine T. Ross
Letitia Rena Roulhac
Keya Joneice Ruston
Ross O'Neil Sampson
Carol Fighmaster Saunders
Geneva B. Saunders
Karen Cornelia Saunders
Talarisha Shenay Saunders
Shericka N. Sawyer
Garrick Devon Scott
Jolyquin C. Sessoms
Monica Denise Sessoms
Joyce B. Shaw
Kimberly Dawn Shearin
Tiffany K. Shearn
Nekeshia Guynetta Simmons
Crystal Deon Simpson
Darlene Helle Skinner
Tiffany L. Slade
Amity N. Sledge
Nikita Shawne Small
Rosslyn Yvette Smallwood
Beshelya D. Smith
Stacy Marie Smith
Sherenia Nicole Solomon
Lakisha Vernett Spellman
Spanishia Dorothy Spragley
Earlyn Rayona Spruill
Tonia A. Spruill
Anita G. Staples
Tiffani Staton
Keisha L. Stephenson
Donna Thornton Stiles
Tisa Sheree Stiles
Tamela L. Stith
Ernest M. Sutton
Linda Rae Sutton
Felicia M. Taylor
Joan Harrell Taylor
Khailliah RaJenna Taylor
Nicole S. Taylor
Varick Theron Taylor
Lisa Diane Temple
Felecia Anette Tetterton
Herbert Michael Thibodea
Blair B. Todd
Chrystal H. Towe
Julia R. Towns
Christopher W. Turner
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Shameika T. Vick
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Ernest Walker, III
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Lakeisha Walton
Lawanda Due Walton
Nikki S. Walton
Kizzy Dimanda Ward
Lynda J. Ward
Chashia Reneé Washingt
Lasindra R. Webb
Tamkia L. Wesson
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David Brandon White
Jason Lee Whitford
Fioria Demeka Wiggins
Kelsey Kendale Wilkins
Alfreda R. Williams
Amber Dawn Williams
Aretha Chanté Williams
Christina G. Williams
Ebonie Latoya Williams
Kedra Williams
Sherri Dionne Williams
Thomas Wilson Williams
Tameka Javel Wills
Amanda H. Wilson
Jennifer Ann Winston
Derek Daniel Witcher
Pierre Jovan Wood
Susan Hodge Worley
Tamarah Young